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MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

February, 1960 Vol. 17, No. 2

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1. Based on estimate by Van Volkenburgh, V. A., and Frost, W. H.: Am. J. Hygiene 71:122 (Jan.) 1933

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Original Articles

ARIZONA MEDICINE

VOL. 17, NO. 2 FEBRUARY, 1960

Rabies in Insectivorous Bats of Arizona

Willard D. Dean, M.S.*
Keith T. Maddy, D.V.M., M.P.H.**
E. Lendell Cockrum, Ph.D.***
H. Gilbert Crecelius, Ph.D.****

RABIES HAS BEEN present in Arizona for many years and the number of laboratory diagnosed cases has remained fairly constant for the past several years. (Fig. 1, 2, 3, 4). In 1953 the first case of rabies in a bat in the United States was diagnosed in Florida in a Florida yellow bat *(Dasypterus floridanus)* that attacked and bit a boy. (1) In 1957 the Arizona State Department of Health Laboratories diagnosed bat rabies for the first time. (2) (3) The bats were from four different areas of the central and southeastern parts of the state, and they were classified as follows: two Hoary bats *(Lasiurus cinereus)*, one Big brown bat *(Eptesicus fuscus)*, one Pallid bat *(Antrozus pallidus)* and one Mexican free-tail *(Tadarida brasiliensis mexicana)*. These bats had been submitted for examination because of a suspicion of rabies.

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**Veterinarian, Communicable Disease Center, Public Health Service, U.S. Dept. of Health, Education and Welfare, Atlanta, Georgia, and assigned to Arizona State Dept. of Health, Phoenix, Ariz.
***Associate Professor of Zoology and Curator of Mammals, Dept. of Zoology, University of Arizona, Tucson, Ariz.
****Director, Division of Laboratories, Arizona State Dept. of Health, Phoenix, Arizona.

This paper presented by Maddy at the Conference on Diseases in Nature Communicable to Man, Austin, Texas, March 12, 1959. Presented – Arizona Cancer Seminar – 1959

In order to study the epidemiological significance of rabies in bats in Arizona, a survey was undertaken which consisted of collecting bats from various parts of the endemic area and examination of them for rabies.

MATERIALS AND METHODS

Bat Collections. – In central and southeastern Arizona during the last half of 1957 and the first half of 1958, 552 bats representing nine species were collected. (Fig. 5) (Table 1) The bats were captured with nets, forceps, and gloved hands.

Personal Protection. – All persons collecting bats had received at least three intradermal injections of High Egg Passage chicken-embryo-attenuated (Flury strain) rabies vaccine supplied by Lederle Laboratories.

Demonstration of Virus. – The bats were killed with chloroform. The brains from collections 1 through 26 were pooled in multiples of 5 and each pooled composite was inoculated into 5 mice. A similar procedure was followed for the salivary glands. Note that the last group of 5 mice in each collection sometimes represented a composite of fewer than 5 bats. From each bat one half the brain (divided longitudinally) and

the salivary glands from one side were frozen and saved for later study. For collections 27 through 31 one half the brain of each bat was used for one group of 5 mice; likewise one set of salivary glands from each bat was used for one group of mice.

The inoculation technic used was the one recommended by the Communicable Disease Center. (4) A 10 per cent tissue suspension was treated with penicillin and streptomycin and injected intracerebrally into a group of 5 white mice (Webster strain).

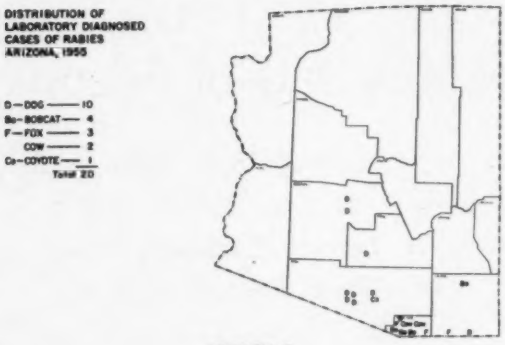
All mice were observed for 30 days for signs of rabies. When mice died, smears of the brain tissue were stained by Sellers' method for miscroscopic examination for Negri bodies. If mice were normal and healthy in appearance after 30 days, they were sacrificed and not examined.

When rabies virus was isolated from a pool, the individual frozen brain or salivary glands of the bats comprising the pool were used for inoculations of groups of 5 mice each.

RESULTS

Isolation of Rabies Virus. — Rabies virus was isolated from 7 pools of salivary glands and from 7 pools of brains. These were from collections 1, 3, 5, 8 and 16. (Table 1.)

From collection 1, individual inoculations resulted in virus isolation from the set of salivary glands of one bat. From collection 3 by individual inocluation, rabies virus was isolated from the brain of one bat. From collection 8, individual inoculation resulted in rabies virus isolation from the set of salivary glands of one bat and the brains of two other bats. From collection 16



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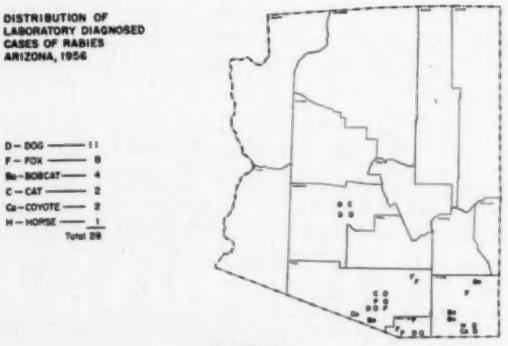

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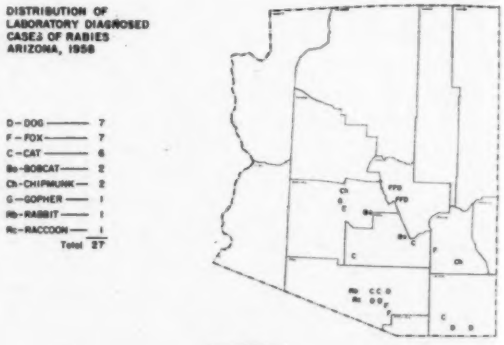

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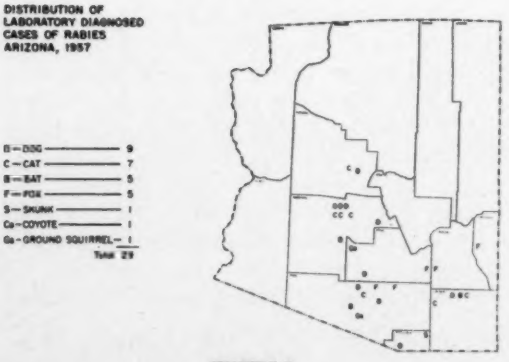

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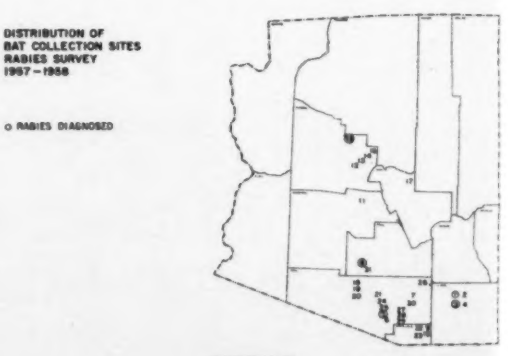


FIGURE 5

Table 1. Summary of Data Relating to Collection of Bats in Arizona in 1957-1958 for Rabies Examinations.

Collection No.	Collection Dates	Place	Type of Habitat	Apparent Health Status	Species	No. Examined Male	Female	Totel	Minimum Number of Bats Found To Have Rabies
1	1957 July 2	Willcox	Under eaves of building	Healthy	Eptesicus fuscus	0	6	6	1
2	July 2	Willcox	In wall of building	Healthy	Tadarida brasiliensis	2	3	5	0
3	July 2	Willcox	Attic of old house	Several re cent deaths	Eptesicus fuscus	0	22	22	1
4	Aug. 2	Willcox	Attic of old house	Healthy	Eptesicus fuscus	0	14	14	0
5	Aug. 5	Twin Buttes	Mine tunnel	Healthy	Antrozus pallidus	15	17	32	3
6	Aug. 5	Twin Buttes	Mine tunnel	Healthy	Myotis velifer	0	3	3	0
7	Aug. 7	Tucson	Under roof of building	Several re-cent deaths	Tadarida brasiliensis mexicana	3	10	13	0
8	Aug. 7	Picacho	Mine tunnel	Healthy	Myotis velifer	35	77	112	5
9	Aug. 25	Canelo	Under roof of building	Many recent deaths	Eptesicus fuscus	1	6	7	0
10	Aug. 25	Canelo	Under roof of building	Many recent deaths	Myotis evotis	13	12	25	0
11	Aug. 26	Sunnyslope	Mine tunnel	Healthy	Myotis velifer	1	8	9	0
12	Aug. 27	Montezuma's Castle	Roof of room	Healthy	Corynorhinus townsendii	12	16	28	0
13	Aug. 27	Montezuma's Well	On roof of cave	Healthy	Corynorhinus townsendii	1	0	1	0
14	Aug. 27	Montezuma's Well	On roof of cave	Healthy	Myotis velifer	1	0	1	0
15	Aug. 27	Beaver Creek Ranger Sta.	Attic of house	Healthy	Myotis californicus	1	0	1	0
16	Aug. 27	Jerome	old building	Healthy	Tadarida brasiliensis	13	35	48	3
17	Sept. 9	Young	Mine tunnel	Healthy	Myotis thysanodes	3	10	13	0
18	1958 Feb. 7	Sawtooth Mountains	Mine tunnel	Healthy	Macrotus californicus	19	3	22	0
19	Feb. 7	Sawtooth Mountains	Mine tunnel	Healthy	Macrotus californicus	2	0	2	0
20	Mar. 23	Silverbell Mountains	Mine tunnel	Healthy	Macrotus californicus	10	7	17	0
21	Mar. 31	Tucson Mountains	Mine tunnel	Healthy	Macrotus californicus	6	18	24	0
22	Mar. 31	Santa Rita Mountains	Mine tunnel	Healthy	Myotis evotis	1	0	1	0
23	Mar. 31	Santa Rita Mountains	Mine tunnel	Healthy	Myotis velifer	1	0	1	0
24	Apr. 2	Tucson Mountains	Mine tunnel	Healthy	Macrotus californicus	8	11	19	0
25	May 18	Helmet Peak	Mine tunnel	Healthy	Myotis velifer	8	30	38	0
26	May 18	Tucson	Flying over water hole	Healthy	Eptesicus fuscus	0	1	1	0
27	July 29	Continental	Under bridge	Healthy	Antrozus pallidus	1	0	1	0
28	July 29	Continental	Under bridge	Healthy	Antrozus pallidus	0	4	4	0
29	July 29	Continental	Under bridge	Healthy	Myotis velifer	0	2	2	0
30	July 29	Tucson	Under porch roof	Healthy	Eptesicus fuscus	2	0	2	0
31	Aug. 8	Picacho	Mine tunnel	Several re-cent deaths	Myotis velifer	2	12	14	0
TOTALS						163	389	552	13

Table 2. List of species of Bats native to Arizona with information as to distribution of each species and the reported diagnosis of rabies both in Arizona and elsewhere in the United States.

Species of Bats	Distribution in Arizona	Numbers and Habitat	Distribution in the United States	Examined In 1957-1958 Arizona Survey	Positive For Rabies In 1957-1958 Arizona Survey	Found to have Rabies by Arizona State Dept. of Health--1957 Routine examination	Rabies has been reported as having been diagnosed in other states of the U.S.
Family Phyllostomatidae							
1. Long-nosed bat *(Leptonycteris nivalis)*	Pima, Santa Cruz and Cochise counties	Large colonies in caves (few mine tunnels)	Southern Arizona, New Mexico and Texas				
2. Hog-nosed bat *(Choeronycteris mexicana)*	Pima, Santa Cruz and Cochise counties	Few individuals, usually near front of mine tunnels	Southern California and Arizona				
3. Leaf-chinned bat *(Mormoops megalophylla)*	Known from two specimens from Santa Cruz County	Rare; caves	Southern Arizona and Texas				
4. Leaf-nosed bat *(Marcrotus californicus)*	Lower elevations; western and southern part of the state	Common; shallow caves, mine tunnels; bridges	Southern California and Arizona	X			X
Family Vespertilionidae							
5. Cave myotis *(Myotis velifer)*	Lower elevations; western and southern part of the state	Large colonies in caves, mine tunnels; buildings	Southeastern California east to Oklahoma and south to Mexico	X	X		X
6. Long-eared myotis *(Myotis evotis)*	State wide at elevations above 5000 feet	Uncommon; mine tunnels; hollow trees	Western U. S.	X			
7. Fringe-tailed myotis *(Myotis thysanodes)*	Statewide at elevations above 5000 feet	Caves, mine tunnels and buildings	Western U. S.	X			
8. California myotis *(Myotis Californicus)*	Statewide	Locally common	Western U. S.	X			X
9. Arizona myotis *(Myotis occultus)*	Known from few localities below Mogollion Rim	Rare; caves, mine tunnels and buildings	Scattered localities in S. Calif., Ariz. and New Mexico				
10. Yuma myotis *(Myotis yumanensis)*	Statewide	Locally common	Western U. S.				
11. Long-legged mytois *(Myotis volans)*	Statewide at elevations above 5000 feet	Uncommon	Western U. S.				
12. Small-footed myotis *(Myotis subulatus)*	Statewide	Uncommon	Mainly Western U. S.				
13. Silver-hired bat *(Lasionycteris noctivagans)*	Statewide at elevations above 5000 feet	Uncommon, solitary tree dwelling bat	Throughout U. S.				
14. Western pipistrel *(Pipistrellus hesperus)*	Statewide	Common, roosts singly in rock crevices, and in cracks in bldgs.	Western U. S.				
15. Big brown bat	Statewide	Locally common;	Throughout U. S.	X	X	X	X

(*Pipistrellus hesperus*)		singly in rock crevices, and in cracks in bldgs.					
15. Big brown bat (*Eptesicus fuscus*)	Statewide	Locally common; colonies in attics of bldgs.; barns; hollow trees	Throughout U. S.	X	X	X	X
16. Red bat (*Lasiarus borealis*)	Statewide in regions of trees	Uncommon, solitary tree dwelling bat	Throughout U. S.				X
17. Hoary bat (*Lasiurus cinereus*)	Statewide in regions of trees	Uncommon, solitary tree dwelling bat	Throughout U. S.			X	X
18. Lump-nosed bat (*Corynorhinus townsendii*)	Statewide at elevations above 5000 feet	Locally common, colonies in caves, damp mine tunnels; few in buildings	Western U. S.			X	X
19. Mexican big-eared bat (*Idionycteris phyllotis*)	Graham and Cochise counties	Extremely rare, one colony known from cave	Known only from Arizona				
20. Spotted bat (*Euderma maniculata*)	Known from four specimens, Maricopa and Yuma counties	Extremely rare. Habits unknown	Extremely rare in Western U. S.				
21. Pallid bat (*Antrozous pallidus*)	Statewide	Locally common; rock crevices, buildings, bridges	western U. S.	X	X	X	X
Family Molossidae 22. Mexican free-tailed bat (*Tadarida brasiliensis*)	Statewide, mainly at elevations below 5000 feet	Locally extremely common, colonies in caves, mine tunnels, buildings and rock crevices	From Oklahoma west and south	X	X	X	X
23. Pocketed free-tailed bat (*Tadarida femorosacca*)	Lower elevations of western and southern part of state	Rare, small colonies in buildings and rock crevices	Southern Calif., Arizona and New Mexico				
24. Big free-tailed bat (*Tadarida molossa*)	Statewide, mainly at elevations below 5000 feet	Rare, small colonies in rock crevices	Rare throughout				
25. Western mastiff bat (*Eumops perotis*)	Lower elevations western and southern Arizona	Rare, small colonies in rock crevices	Southern Calif., Arizona and Texas				
26. Underwood's mastiff bat (*Eumops underwoodi*)	Known only from regions of Sasabe, Pima county	Extremely rare, probably in rock crevices	Known only from Arizona				

rabies virus was isolated from the brains of two different bats.

Cumulative data for both the positive pools and the individual isolations shows that rabies virus was present in at least 13 different bats.

Demonstration of Negri bodies in the brains of the mice was considered a definite diagnosis of rabies; however, as a further check two of the isolates were sent to the Virus and Rickettsial Laboratory of the Communicable Disease Center of the Public Health Service. Both were identified as rabies virus by serum neutralization tests.

DISCUSSION

It is conceivable that the additional period of freezing and a second thawing was detrimental to the rabies virus in the brains and salivary glands used for follow-up individual inoculations, resulting in failure to isolate virus from some individual bats in identified positive pools.

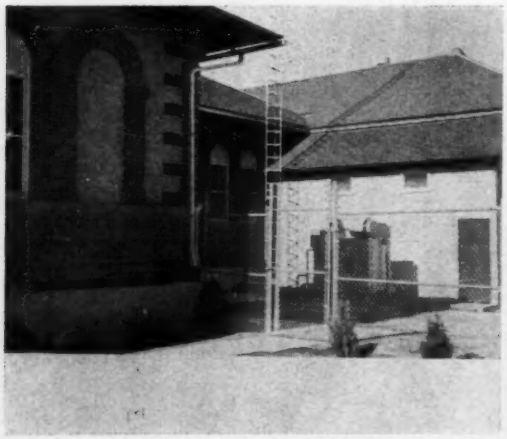
We have examined 10 of the 26 species of bats commonly found in Arizona (nine in this survey herein reported and one, *Lasiurus cinerus,* taken from routaine laboratory admissions) and have diagnosed rabies in five of them *(Eptesicus fuscus, Tadarida brasiliensis mexicana, Myotis velifer, Antrozus pallidus* and *Lasiurus cinereus.)* (Table 2)

In other parts of the United States rabies has been diagnosed and reported in 7 of the above mentioned 26 species. We have knowledge of three species commonly found in Arizona that have been diagnosed elsewhere in the country as having rabies, but the results are not yet published. Constantine and Solomon* have isolated rabies virus from *Macrotus californicus,* and have made suspect isolates from *Tadarida molossa* and *Corynorhinus townsendii.* These bats were collected from other states, however, these species are also found in Arizona. Thus over half of the species of bats found in Arizona are strong rabies suspects.

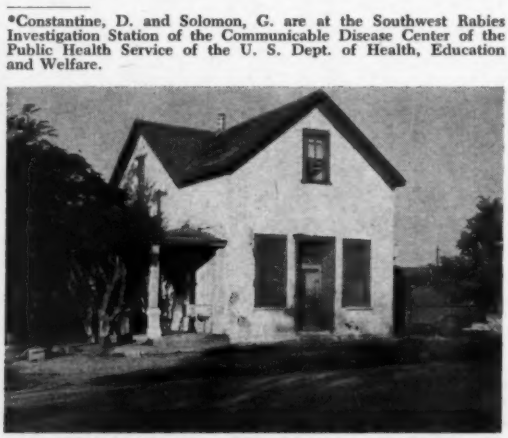
Of the 26 species known to occur in Arizona, 15 are widely distributed and are relatively common in the western part of the United States. There are 11 species of bats remaining which have not been surveyed, except for the *Tadarida molossa* mentioned above. These species are rare in the United States or they are species found primarily in Mexico and are found in the United States in a small region just north of the U.S.-Mexico border.

Collection 1 was from the eaves of a building and collection 3 was from the attic of an old house a few blocks away in the town of Willcox. (Figs. 6 and 7). It is possible that the bats were of the same colony. The colony of Big brown bats in the old house was one from which rabies virus had been isolated from one bat several weeks before. This was a maternity colony which had been observed to congregate in the spring and disband in the fall for the two previous years. Big brown bats spend their winter months in hibernation in caves, mine tunnels and rock crevices in the same general area where they spend their summers. One bat of this colony carried a wingband one of us (Cockrum) had placed on it in a mine tunnel Sept. 27, 1956 at Portal, 50 miles to the southeast. One recently dead Mexican free-tail bat *(Tadarida brasiliensis*

*Constantine, D. and Solomon, G. are at the Southwest Rabies Investigation Station of the Communicable Disease Center of the Public Health Service of the U. S. Dept. of Health, Education and Welfare.



6. A Rabid Big brown bat was Taken From Under Eaves of This Building for Collection No. 1.



7. A Rabid Big brown bat was Taken from the Attic of This Old House for Collection No. 3.

mexicana) was found with the colony in the attic. This species has been observed living in caves in Mexico in areas where vampire bats *(Desmodus rotundus)* live. The Vampire bat has often been found to transmit rabies.

We have received reports of dogs and cats capturing bats in the Willcox area. We also have had reports from Cochise County that coyotes, bobcats, and skunks were seen in mine tunnels trying to catch bats.

The big brown bat, found to have rabies in collections 1 and 3, is a large brown bat with short mouse-shaped black ears and a naked interfemoral membrane. It has a wingspread of approximately 13 inches. Although this species is widely distributed over the United States, Canada, Mexico and Central America, its seasonal migrations are usually only a few miles.

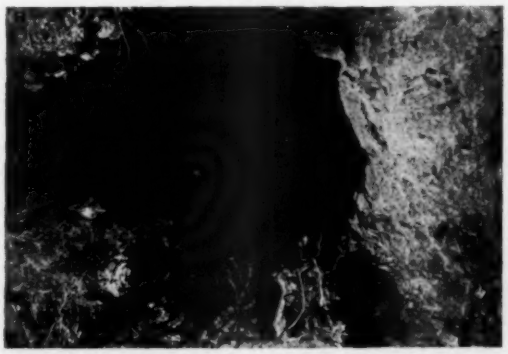
Collection 5 consisted of Pallid bats *(Antrozus pallidus)* from an abandoned mine tunnel on a mountainside 20 miles south of Tucson. (Figs. 8 and 9) Banding studies have revealed that bats of this colony feed throughout the Tucson valley nightly. One bat of this species that was picked up in the Tucson valley four months before was found to have rabies. During 1957 we received reports of foxes and coyotes being seen in the same mine tunnel with bats in this area. Also we had reports of dogs and cats in Tucson area that were seen killing and eating bats.

The Pallid bat is a large brown bat with long ears and a naked interfemoral membrane. The wingspread is approximately 12 inches and the ears are more than one inch in length. Dorsally the Pallid bat is yellowish-drab in color and ventrally it is almost white. Pallid bats occur in western North America from extreme southern British Columbia southward to central Mexico. They are probably permanent residents in Arizona, spending the winter months hibernating in rock crevices. In the summer, groups of up to 50 individuals spend the daylight hours hanging in the rock crevices, caves and mine tunnels. Each female gives birth to one or two young sometime during June or early July. At night Pallid bats capture large insects which they carry to a secluded spot where the insects are devoured in peace. These night roosts are often around houses (in a carport or under the eaves of a patio) but they may be in a shallow cave, mine tunnel, or under a bridge. This is the species of bat that is most often encountered by residents of the suburbs of Tucson.

Collection 8 was from an abandoned mine tunnel in Picacho Peak. (Figs. 10 and 11) This was a colony of Cave myotis bats *(Myotis velifer).* (Figs. 12 and 13) During the summer of 1957 this colony numbered about 5,000 but during the summer of 1958 only about 100 lived there. When collections 8 and 31 were made a hooded skunk *(Mephitis macroura)* was seen each time. When the last collection was made a dead skunk was found and another skunk was observed jumping up the wall trying to capture bats. This skunk was killed but was not found to have rabies. (Fig. 14)

These bats apparently foraged at night for insects over the nearby Marana valley. Cases of rabies have been diagnosed in recent years in this area in dogs and wild animals.

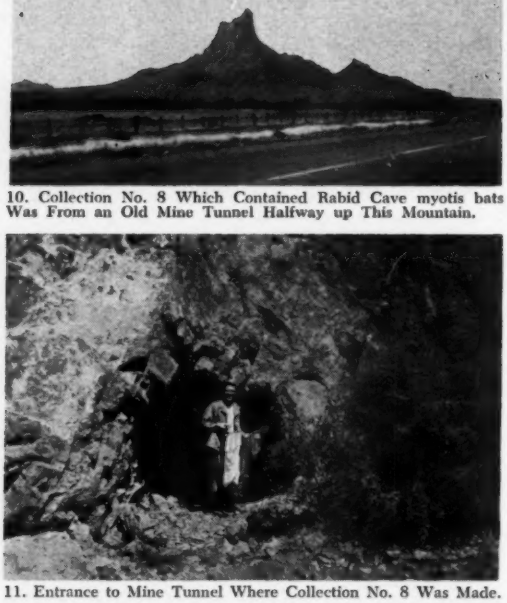
The Cave myotis bat *(Myotis velifer)* has a general color of dull sepia or drab dorsally and is paler ventrally with white hairs on the sides



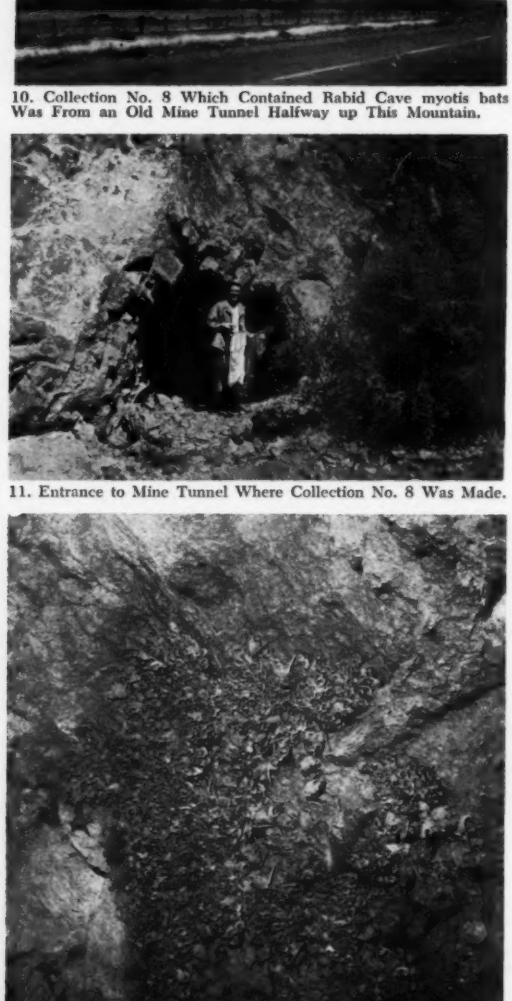
8. Rabid Pallid Bats were Taken From Roof of This Cave for Collection No. 5.

9. Pallid bat (Antrozus pallidus)

10. Collection No. 8 Which Contained Rabid Cave myotis bats Was From an Old Mine Tunnel Halfway up This Mountain.



11. Entrance to Mine Tunnel Where Collection No. 8 Was Made.

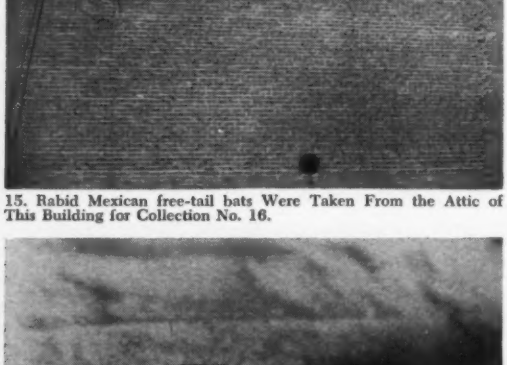


12. Cave myotis bats on the Ceiling of Cave.

13. Cave myotis bat (**Myotis velifer**) on left and Long-eared myotis bat (**Myotis evotis**) on the right.

14. Skunk Shot in Mine Tunnel While Trying to Capture Bats. Collection No. 8 Containing Rabid Cave myotis bats was From This Tunnel.

15. Rabid Mexican free-tail bats Were Taken From the Attic of This Building for Collection No. 16.



16. Mexican free-tailed bat (**Tadarida braziliensis mexicana**).

of the abdomen. It is extremely common in southern and western Arizona. Maternity colonies of several thousands of individuals congregate in caves and mine tunnels in April and May. Here a single young is borne by each female sometime in June. After approximately six weeks the young are large enough to fly. By late September the maternity colonies break up and few Cave myotis bats can be found anywhere in the state until the following spring. Although several thousand bats of this species have been banded in southern Arizona in the past six years, to date none of these have been recovered in the winter months. It is thought probably that they migrate into Mexico during the winter.

Collection 16 was taken from the attic of an old building in Jerome, an almost abandoned copper mining town. (Figs. 15 and 16) Residents reported large colonies had been seen in old buildings each summer in this part of town for at least the past five years. The bats were observed to leave each fall.

The only species collected was the Mexican free-tail *(T. brasiliensis mexicana)*. This species is medium-sized with low fleshy ears that extend forward over the snout and with the posterior half inch of tail extending beyond the naked interfemoral membrane. It has a wingspread of approximately 10 inches. Mexican free-tails occur in western North America from central Utah and northern Oklahoma southward throughout Mexico. In the summer months the female free-tails congregate in large numbers in mine tunnels, open caves, under bridges, and in attics and crevices in the walls of buildings. In these summer aggregations of females, known as maternity colonies, the females each give birth to a single young. Few bats of this species are found in the state in the winter. Banding studies under way indicate that many of them spend the winter in Mexico.

This colony very likely foraged nightly for insects over the Verde valley, a nearby agricultural area to the east. We received reports of dogs and cats killing bats in Cottonwood, a town 9 miles away. 3½ months before collection 16 was made, a Hoary bat *(Lasiurus cinereus)* was killed by a fisherman who was bothered by its repeatedly flying too near him in the daytime. He was bitten by it and laboratory study revealed it was rabid. This site was 25 miles east of Jerome. Occasional cases of rabies in wild and domestic animals are reported from the Verde valley. A week after collection 16 was made at Jerome, 16 miles east of Cornville, a rabid cat bit a child. This cat had been observed for several weeks previously trying almost daily to catch a bat that spent the days on the ceiling of a fruit storage cave .The bat could not be found after this episode was reported.

During 1958 there was a sizable outbreak of rabies in foxes between Superior and Miami. We have had reports of foxes being seen in old mine tunnels where bats were also seen in the Superior area. We have not had time to collect and study bats from this area.

Considering the vast geographic area and the millions of bats living in the area, obviously this study was only a superficial sampling. In spite of this we believe that these studies give some indications that rabies in bats is a public health problem in Arizona.

SUMMARY

A total of 552 bats were gathered in 31 collections from 16 sites in central and southeastern Arizona during the last half of 1957 and the first half of 1958. Nine species of bats were represented in the collections. By the mouse inoculation technic rabies virus was isolated from the following species: Big brown bats *(Eptesicus fuscus)*, Mexican free-tail bats, *(Tadarida brasiliensis mexicana)* Cave myotis bats, *(Myotis velifer)* and Pallid bats *(Antrozus pallidus)*. At least 13 different bats were found to be infected with the rabies virus.

ACKNOWLEDGEMENTS

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Evaluation of some "Recent Advances" in The Management of Carcinoma of the Cervix Uteri

by

Howard B. Hunt, M.D.*

Omaha, Nebraska

AS A MEMBER of the Assembly I wish to express sincere appreciation to the American Cancer Society, Arizona Division, for sponsoring and arranging this symposium. I attended the meeting a year ago at Tucson and found it to be highly informative and presented in a most congenial atmosphere. This year I am honored to appear along with speakers of international reputation such as Dr. Brunchwig. One of my surgical colleagues jestingly identified the Brunchwig operation for me as the procedure in which the surgeon takes out everything and then fills the patient up with Gelfoam. As a radiotherapist, I am grateful to Dr. Brunchwig(1) for the pioneer work which he has done in an effort to further control disease in those unfortunate patients who still have recurrent and residual carcinoma. We must admit that many patients with carcinoma of the cervix are not cured by radiotherapy just as many are incurable by radical surgery. As radiotherapists we feel that pelvic exenteration has a definite but rather limited role in the treatment of selected patients with carcinoma of the cervix as we shall detail later.

Progress In Cancer Control

Progress in the control of carcinoma of the uterine cervix has been among the most outstanding accomplishments in the conquest of cancer during the past thirty-five years. Such progress has resulted from a lowered incidence of the disease, detection of the disorder in its pre-invasive stage, earlier diagnosis of invasive cancer and in general more effective treatment. The public and professional programs of the American Cancer Society have contributed significantly to this program. The overall death rate from uterine cancer has declined progressively from 18 per 100,000 total population in 1932-34 down to 10.5 during 1950-52 in Massachusetts. Likewise in Nebraska the death rate from uterine cancer has declined from 11.5 in 1944-48 per 100,000 total population down to 6.6 during 1954-57.

This reduction of deaths from uterine cancer has occurred almost exclusively in carcinoma of the cervix and results primarily from the treatment of patients at earlier stages of disease. Furthermore there is less carcinoma of the cervix now than twenty years ago, apparently related to improved economic status with better genital hygiene. Other conrtributing factors are repair of cervical lacerations following child birth, biopsy and elimination of questionable lesions of the cervix and circumcision and better genital hygiene in the male. As a result of the public education program of the American Cancer Society women are reporting to doctors on the occurrence of any unusual vaginal discharge or bleeding as well as for cancer detection examinations. More doctors are doing complete pelvic examinations as part of the routine physical and check-up examination of female patients.

The absolute five year survival rate for patients with invasive carcinoma of the cervix seen at the University of Nebraska Hospital has increased from 20.5 per cent for the period 1931-36

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Presented – Arizona Cancer Seminar – 1959

up to 55.8 per cent for the period 1948-52(2), (Table 1). This improved survival rate has resulted primarily from more patients with early disease and to a lesser degree from improved therapeutic procedures. Combined Stage I and II cases increased from 26 per cent during the early period of 1931-36 up to 72 per cent for the period 1948-52. The incidence of advanced Stage IV cases remains disturbingly high, being about 12 per cent in the University series and about 8 per cent in private practice. The advanced group is represented primarily by post-menapausal widows often brought to the doctor by their family because of the soiling of bed linens, malodorous discharge, hemorrhage, urinary retention or pain. This persistence of Stage IV cases remains a challenge in the field of public education.

Cytologic Smears And Tissue Biopsies.

Invasive carcinoma of the cervix is preceded in most cases by an atypical dyskeratosis. When such cellular atypia progresses throughout the full thickness of the mucosa it becomes carcinoma in situ. At the in situ stage there is no extension through the basement membrane and the lesion should be curable by destruction or surgical resection. It appears that about 10 to 20 per cent of such in situ lesions progress to invasive carcinoma over a period of 5 to 10 years. In situ lesions may show no visible ulceration on examination of the cervix and are usually detected by cytologic examination of vaginal smears, Papanicolaou technique. Invasive carcinomas of the cervix give rise to ulceration or nodulation and present usually as visible lesions but are most precisely identified by tissue biopsy. Gross invasive carcinoma of the cervix gives rise to ulceration with inflammation and hemorrhage which may so obscure the vaginal smear as to result in a failure to detect such carcinoma by the cytologic examination alone.

Proper examination for the detection of cervical cancer should include first a speculum and digital examination, then cytologic smears by cervical scrapings or from the vaginal pool are indicated if there be any questionable lesion or even with a normally appearing cervix. If there be an obvious lesion of the cervix biopsy is absolutely indicated since as mentioned above, cancer cells are often obscured in smears by the attending necrosis, inflammation and hemorrhage. On the other hand pre-clinical lesions such as carcinoma in situ and some endocervical lesions may not be visible on inspection but are detected by cytologic smears. Obvious gross lesions can usually be easily and safely biopsied in the office using a sharp cutting biopsy forcep without anesthesia. Such bleeding as occurs can usually be controlled by electrocautery or by hemostatic gauze. The patient with repeatedly positive cytology and no obvious lesion presents a more difficult problem requiring a ring biopsy or quadrant biopsies of the cervix. The interpretation of tissue sections by an expert, impartial pathologist is essential. Interpretation of atypical dyskeratosis as in situ carcinoma or of in situ changes as invasive cancer will result in overtreatment of patients with these borderline changes. Such upgrading of lesions will augment the five year survival rate fallaciously. It is our belief that certain current claims for superiority of therapy based on increased five year survival rates are poorly founded. Too often the higher survival results from inclusion of dysplastic and in situ lesions as invasive carcinomas and not from some innovation or superiority of therapy. On the other hand it must be borne in mind that some lesions reported histologically as in situ may be associated with invasive carcinoma in adjacent areas, making meticulous histologic examination of the removed specimen essential. All patients showing persistent dysplasia by cytology should be carefully followed, realizing that some cases may show progressive change into neoplasia over a period of years. Histologic changes during pregnancy may simulate carcinoma giving reason for cautious consideration of a tissue diagnosis of early carcinoma in the normally appearing cervix of a pregnant woman.

Histocytologic Preselection of Therapy.

Can the suitability of a specific case for treatment by radiotherapy versus surgery be predicted with reliability from histocytologic pattern? Claims for histocytologic predictions of radiation response have been made by Glucksman (1949),(3) Graham (1947),(4) and others. Although various criteria have been proposed none have found general confirmation and acceptance by cytologists and radiotherapists. The most promising methods depend upon the progressive disappearance of carcinoma cells during the course of radiotherapy but this does not allow preselection before initiating treatment. Such methods include the serial biopsies of Glucks-

man, the radiation response of Graham and the D.N.A. response of Gusberg(5). The preexisting ratio of basal to squamous cells in vaginal smear prior to therapy appear to have some correlation with host-resistance, virulence of disease, age of the patient and ultimate prognosis regardless of the therapeutic method. At present there is no generally accepted evidence to warrant cytologic preselection of therapy. Cytologists who promote such thesis are unable to convey selective discrimination to their students and to other cytologists. Merrill(6) points out that the data by which Graham(7) endeavored to show correlation of sensitization response (SR) with survival rates after radiotherapy do not provide a true basis for scientific analysis. For example, patients with poor SR and early disease were treated surgically whereas those with poor SR and late disease were irradiated. As a consequence, patients with poor SR did badly when irradiated and very well when operated. This was not due to the method of therapy but rather through awarding early cases to surgery and loading radiotherapy with advanced cases. Basal response, the percentage of basal cells (good above 45 per cent, poor below 35 per cent) has been more recently proposed by Smith (8) as an index for prediction of radioresponse. In general, the basal cell count is low for in situ cases and in patients with advanced disease. Again if the in situ cases are operated and the advanced and older cases irradiated, recurrence rate and survival studies would appear to support the thesis that low basal cell count indicates unsuitability for radiotherapy. SR and basal cell count seem to offer some indication of host reaction to disease but have no general acceptance or worth as a basis for decision as to whether a given case should be treated by radiation or by surgery.

Clinical Evaluation and Individualized Management

It is generally accepted that clinical criteria are far more dependable than histocytologic patterns for selecting management of the individual patient with carcinoma of the cervix uteri. Treatment of the individual patient with carcinoma of the cervix can be best planned only after a reliable histologic diagnosis has been established, gross extension of the disease determined and the general status of the patient evaluated clinically. A combined rectovaginal bimanual examination and probing of the uterine canal are essential to evaluate the extent of disease about the cervix, down the vagina and into the paracervical and lateral pelvic regions. With more advanced disease, urographic and cystoscopic studies are required for evaluation of ureteral compression and invasion of the bladder. An x-ray film of the chest is indicated in patients with more advanced disease. A complete history and physical are essential for general evaluation of the tolerance and reserve of the individual patient. Laboratory studies would include complete blood count, urinalysis and a blood urea nitrogen in case there be any suggestion of ureteral compression.

For statistical purposes, cases with invasive carcinoma of the cervix are arbitrarily grouped under clinical Stages I, II, III and IV as defined by the League of Nations Committee. In reality

TABLE I

CARCINOMA CERVIX UTERI – 5 YEARS SURVIVAL, abs.
UNIVERSITY OF NEBRASKA HOSPITAL, 1948-52

Stage	*Total Cases*	*5 year surv. Cases*	*Died any cause*	*Lost to F.U.*
INVASIVE CARCINOMA				
1	38	33-87%	5	0
2	40	22-55%	18	0
3	18	7-39%	11	0
4	15	0- 0%	15	0
All	111	62-55.8%		0
(Ra Th. alone 102, Surgery & Ra. Th. 5, Surgery alone 4)				
IN SITU, NONINVASIVE				
0	7	5	2	0

there exists a broad spectrum in degrees of extension of disease with no real sharp difference between an early Stage II and a late Stage I, or a late Stage II and an early Stage III except as it exists in the hands and mind of the examiner. Stage 0 refers to in-situ carcinoma which is really not clinical carcinoma since there is no invaison beyond the basement membrane.

Stage 0 in-situ carcinoma can be effectively eliminated by surgical removal or local irradiation. The stage and distribution of disease serve as a guide in the planning of therapy and as an index to prognosis. In practice radiotherapy or total hysterectomy with a wide vaginal cuff may be used for control of in situ lesions in women approaching or past the menopause. Younger women may be treated by total hysterectomy leaving the ovaries or by wide conization of the cervix with careful microscopic studies and continued followup if further child bearing is desired. In case radiotherapy is elected in the older patients, dosage is conservative and confined to intracavitary radioactive sources along the uterine canal and across the vaginal vault.

Stage I cases, invasive lesions still clinically confined to the cervix, are treated by radioactive sources along the uterine canal and across the vaginal vault supplemented by external irradiation to the parametria in all except the borderline cases. The addition of parametrial therapy becomes more essential with larger lesions and with disease involving the endocervix due to wider local extension and the increasing incidence of nodal metastases.

Stage II lesions have spread to the vagina and/or infiltrated the paracervical tissues. Such cases receive not only intracavitary irradiation and external irradiation but may require individualized supplementary vaginal or interstitial radioactive sources according to the distribution of disease. Special consideration must be given to the patient presenting a narrow vaginal vault or with involvement of the vesical-vaginal or rectovaginal septum. Patients presenting persistent bleeding, sepsis and other complicating problems require special consideration. Pelvic abscess usually requires surgical drainage. The incidence of nodal metastases varies from 15 per cent with early Stage II lesions up to 50 per cent with advanced Stage II lesions with corresponding variability in survival rates.

Stage III lesions with extension of disease to the lower third of the vagina or laterally to the pelvic wall require proportionally more external irradiation and a longer period of treatment to raise the dosage at the peripheries of disease. Stage IV lesions with extension of disease above the pelvis are uncontrollable. Extension to the vulva or bilateral extension of disease to the pelvic walls resolve occasionally under radiotherapy. Lesions infiltrating directly into the bladder and rectum are best managed by surgical exentration since resolution of such cancer by radiotherapy may leave a fistula.

Radiotherapy properly applied to a carcinoma of the cervix should eradicate the primary lesion and its immediate extension into the vaginal and paracervical structures in nearly all cases. Con-

TABLE II

CARCINOMA CERVIX UTERI – 5 YEAR SURVIVALS, abs.
NEBRASKA METHODIST HOSPITAL, 1948-53
INVASIVE CARCINOMA – RADIOTHERAPY (Surg.)

Stage	*Total Cases*	*5 year Survivals*	*Died any cause*	*Lost to F.U.*
1	47	41-87%	6	0
2	49	31-63%	17	1
3	31	10-32%	21	0
4	8	1-12%	7	0
All	135	83-61.2%		1
		IN SITU, NONINVASIVE		
0	5	5	With gland invasion	0
0	12	11	No invasion seen	
?	3	3	Dysplasia, In-situ?	
0?	20	19	1	

trol of metastases to the obturator, iliac and presacral nodes by radiotherapy is still questioned by some surgeons although such control has been documented by Kottmeier(9), and others. Five to six thousand rads to the lateral pelvic wall during a period of four to six weeks should be cancerocidal in some cases. Two to three thousand rads can usually be delivered by intracavitary radioactive sources. Conventional x-ray can add 2,000 to 3,000 rads more in a period of three to five weeks. Dosage to lateral pelvic nodes can be brought up to 6,000 roentgens readily on all patients through telecobalt or megavoltage therapy. Control of nodal metastases by radiotherapy is indicated by the lowered incidence of positive nodes in surgical specimens after radiotherapy as reported by Morton(10). Furthermore, the survival rates after radiotherapy for Stage I and II cases are fully equivalent to the best survival rates after surgery with radical lymph node dissection and admittedly the surgical cures include a significant number of patients with nodal metastases proven histologically. For example Brunschwig(11) reports 26 per cent of patients with nodal metastases surviving five years after surgery.

STATUS OF PARAMETRIAL RADIOGOLD, vs EXTERNAL IRRADIATION

Instillation of colloidal radiogold for irradiation of the parametria in lieu of external irradiation was initiated by Sherman, Allen and Nolan in 1950(12). The original thesis was that the radiogold particles would be taken up by the lymphatic nodes, and thereby intensively irradiate nodal metastases. Paradoxically, histologic studies have shown little or no radiogold taken up by nodes filled with cancer, whereas the normal nodes accumulate the radioactivity in high concentration. Although the beta rays from radiogold deliver an extremely variable dosage of from near 0 up to 80,000 rep in a scattered pattern, the range of the beta radiation is only 1 to 2 millimeters. Only the more penetrating gamma rays, about 15 per cent of the total radiation, may be depended upon to reach into the larger nodal metastases. The instillation of 50 to 70 millicuries into each parametrium may be calculated to deliver about 2,000 to 3,000 gamma roentgens in a spotted pattern to the peripheral pelvic tissues. Comparable dosage is delivered by conventional external x-ray therapy in a predictable isodose pattern and even higher dosage can be readily delivered by external telecobalt therapy if required. Allen, Sherman(13) and associates supplement the parametrial radiogold by one or two conventional applications of radium along the uterine canal and in the lateral vaginal recesses by a Terpogosian applicator. Werthheim hysterectomies with lymph node resection have been done about four weeks later in good risk Stage I and II cases with complications reported in about five per cent of patients consisting of genitourinary and gastrointestinal fistulae and of sciatic neuritis in some patients.

Various factors appear to contribute to the fantastically high survival statistics presented by Allen and Sherman(13) for cases treated by radium and radiogold, a three to seven year survival rate of 79.9 per cent. First, the case material is very predominantly early containing about twice the proportion of Stage I cases as shown in the comparative group treated by them with radium and conventional x-ray therapy in a previous series. Any inclusion of in situ dysplastic lesions in the radiogold series would tend to load the data in favor of a fallaciously high survival rate. With a predominance of early cases the average lesion within each stage tends to shift to earlier level with a correspondingly better prognosis. Stage IV and advanced Stage III cases unsuitable for radiogold were excluded from their series. Furthermore, eleven patients lost to follow-up and dead from other causes were excluded from the final computation whereas they should be charged against survival as in the comparable computation of absolute survival rates (See Tables I and II). Survival rates were expressed in terms of three to seven years which are not fully comparable to five year survivals. After the above statistical corrections have been made the five year survival rate for the series would seem to approach conventional results from intracavitary radium and proper external x-ray therapy. The high survival rates appear to reflect the early cases material and selection of cases rather than any definite superiority of parametrial irridiation by radiogold as compared with conventional x-ray or telecobalt therapy.

EVALUATION OF SURGICAL MANAGEMENT

Previous pelvic surgery always renders radiotherapy more difficult and less effective. Optimal central placement of radium along the uterine

canal is made impossible and the small bowel lies directly above the radium placed in the vagina. The placement of radium after hysterectomy is restricted in effectiveness and also more hazardous. Vascularity of pelvic tissues has been reduced by ligation and postsurgical scarring which reduces the effectiveness of radiotherapy and increases the hazard of complications. Addition of more external radiation and the substitution of interstitial implantation of radium needles paravaginally do not adequately compensate for such anatomic and vascular deficiency following surgery. The five year survival rate for Stage I cases is reduced about ten per cent and for Stage II cases about 60 per cent by prior hysterectomy in our experience(14).

What are the possible indications for surgical treatment of cervical cancer to be considered by a radiotherapist? 1. Although in situ carcinoma is not really cancer of the cervix, it is treated primarily by total hysterectomy, particularly in young women for preservation of ovarian function or rarely by wide conization for preservation of child bearing. 2. Refusal of a patient to accept radiotherapy for early invasive cancer would require not only a panhysterectomy but also a resection of a wide vaginal cuff and a bilateral lymph node resection in order to be at all comparable to proper radiotherapy. 3. The association of early carcinoma of the cervix with other gross pelvic disease such as an ovarian tumor, fibroid tumor or pelvic abscess which warrants surgery. 4. Recurrence of cervical cancer in an area previously adequately irradiated. 5. Direct infiltration of cancer through the bladder or rectum with disease still confined to the pelvis warrants consideration of pelvic exeneration.

Brunschwig(11) reports a five year survival rate of 54.6 per cent for well selected surgical cases. About 25 per cent of all primary cases were fully suitable for surgery. The overall five year survival rate for all primary cases seen was 44.2 per cent as compared with a comparable survival rate of 55.8 per cent for our state cases and 61.2 per cent for our private cases unselected and treated by radiotherapy. Our cases were treated by intracavitary radioactive sources and orthovoltage x-ray through the parametria. The overall five year survival rate for clinic patients has been reported by the Roswell Park Hospital as(15) 56.7 per cent and by the Francis Delafield Hospital(15) as 55 per cent.

Dr. Meigs(15) reports 81 per cent five year survival rate for Stage I cases treated by radical hysterectomy and lymph node dissection as compared to 87 per cent for 85 cases treated by radiotherapy in our current series of Stage I cases (Tables I, II). All in situ and equivocal lesions have been excluded from our Stage I group. The five year survival rates following radiotherapy for Stage I lesions at Roswell Park Hospital are 88 per cent and at the Francis Delefield Hospital 89 per cent. Meigs shows a five year survival rate of 58.7 per cent for selected Stage II cases as compared with an absolute survival rate of 60 per cent for our combined series (Table I, II) of 89 unselected Stage II cases treated by radiotherapy, 55.8 per cent for Roswell Park and 71.3 per cent for Delefield also treated by radiotherapy.

Our overall five year absolute survival rate for 111 state cases treated during 1948-52 at the University of Nebraska Hospital (55.8 per cent) and 135 cases treated in private practice (61.2 per cent) with a total of 246 cases during 1948-53 was 59 per cent. All cases except one were followed five years and more. All cases dead from any cause or lost to follow-up were charged against survival. In situ cases have been excluded from Stage I cases and detailed separately. Our data appear representative of current survival rates for invasive cervical carcinoma Stages I and IV treated by intracavity radioactive sources and external irradiation.

SUMMARY

1. The death rate from uterine cancer has declined from 11.5 in 1944-48 per 100,000 total population down to 6.6 during 1954-57 in Nebraska.

2. Patients with carcinoma of the cervix uteri are being diagnosed and treated at earlier stages which primarily accounts for the definitely rising five year survival rate. The American Cancer Society has contributed significantly to this improvement through its program in public and professional education.

3. Proper examination for detection of cervical cancer includes a speculum examination, Papanicolaou smears as indicated and tissue biopsy of any obvious lesions of the cervix.

4. Clinical criteria are the most dependable guides in selecting the best management for in-

dividual patients with invasive clinical carcinoma of the cervix uteri.

5. Surgical Management of invasive carcinoma of the cervix warrants consideration in patients who refuse radiotherapy, have other pelvic disease warranting surgery, show recurrence of cancer in areas previously adequately irradiated and who have cancer infiltrating into the bladder or rectum.

6. Even superb surgical management consisting of total Werthheim hysterectomy with radical lymph node dissection has not proven superior to conventional radiotherapy in the overall control of invasive carcinoma of the cervix.

7. Metastases to pelvic lymph nodes from carcinoma of the cervix uteri can be effectively controlled in some cases by conventional radiotherapy.

8. The overall five year absolute survival rate for 246 unselected cases (111 state, 125 private) of invasive carcinoma of the cervix uteri treated by radiotherapy was 59 per cent for 1948-53.

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AMA CLINICAL MEETING

"Freedom of Choice" Gets New Life

The following was adopted: "Lest there be any misunderstanding, we state unequivocally that the AMA firmly subscribes to freedom of choice of physician and free competition among physicians as being prerequisites to optimal medical care. The benefits of any system which provides medical care must be judged on the degree to which it allows of or abridges such freedom of choice and such competition."

Another Forward Step

Another progressive step was taken in regard to the so-called Relative Value Studies (Scales) (fixed fees) when the Delegates voted very apparent "softening" support. The Delegates resolved that they "approve *in principle the conducting of* Relative Value *Studies* (emphasis theirs) by each state medical association, rather than a nationwide study or a series of regional studies by this Association." The resolution removed the AMA from what could have been interpreted to be a position of mandating studies by delegating the decision to the various states with the following words: "That this Committee (on Medical Practices) be authorized to assist as noted previously, those states *desiring to undertake Relative Value Studies*" (emphasis theirs). Studying the Reference Committee discussion, and reading between the lines, one happily interprets the resolution as a mild slap on the wrist to the overzealous proponents of this fee-fixing device, and an admonition to them to stop propagandizing and merely offer assistance only to those who voluntarily decide to undertake the "Studies" – and "Studies" is underlined in both instances. This is all to the good and we hope the action will become a strong, piercing beacon light that will show the grave dangers inherent in the foolish and needless "Studies," "scales," and "fixed fees."

(AAPS Information Bulletin No. 19-59)

CONGRESSIONAL HEARING ON VA CARE

The Delegates approved in principle the Maryland resolution recommending a congressional hearing on the need for limitation of Veterans Administration care to service connected disabilities only, and referred the resolution to the Council on Legislative Activities for study and recommendation.

(AAPS Information Bulletin No. 19-59)

Papago Indian Medicine

by

Joseph G. Lee, M.D.

"Only the ignorant scorn . . . the wise, understand." — Poe

DO PAPAGO medicine-men really have a cure for rabies in animals and in men? How many centuries have they vaccinated against small pox? Just how effective are their quantities of native herbs as medicines? Could Indian medicine-men have secrets which science might well investigate?

These are unanswered questions, but ones which raise their heads when one sees the strange equipment of a medicine-man's basket and the many Arizona plants which they and their Indian followers still use trying to cure all manner of ailments.

There is a universal natural factor which operates in both modern medicine and that practiced amongst the primitive peoples of the world. It is an emotional factor of belief or faith; as the ultimate force, it may operate as religious ecstasy to cure as at Lourdes an occasional simple, uncomplicated soul who was deemed so incurable as to have been given up by doctors of medicine.

In most medical treatment a very special emotional relationship exists between physician and patient which is known as "rapport." Rapport is by no means confined to medicine, but exists in all close relations, such as may ocur between teacher and pupil, leader and follower. Without it nothing is deeply significant. When rapport is present immense power is given to the medicine-man — sufficiently so that patients are helped or cured quite independently of special method. From the beginning of time this power has been used to relieve symptoms, to inspire courage and to aid in bearing burdens.

The blindness to the meaning of rapport on the part of the medical profession has been nothing short of extraordinary. The force which it represents has been better grasped by the quack healer and the primitive medicine-man, who knows that it can influence people quite regardless of the worth of his professed agency of cure. If it were necessary to choose between method and rapport in treatment there is little question that rapport would be the more useful agency. To be sure, no one knows what rapport consists of. There is magic and mystery in it. Its absence leaves words of logic and wisdom fruitless and sterile. With this term is often the implication of the dynamic, authoritative, and dominant leader . . . such as the Indian medicine-man.

My guide at the University of Arizona once showed me the contents of the Navajo medicine-man's bag . . . leaves, bits of rock, a frog's leg, toys, trifles. "Do you see anything funny about that?" he said. "I have seen too many strange things about Indians to see anything funny," I replied. "That is psychoanalysis . . . centuries before we ever heard of it." The Indian conceives the created world as a vast harmony . . . a 'not a sparrow falls . . .' If you are sick, it is perfect fitted whole. He believes literally that 'not a sparrow falls . . .'. If you are sick, it is because you have fallen out of harmony. The medicine-man's task is to find out with what you have ceased to fit. "Is it the bird, the rock, the tree, the coyote?" Setting up the rhythm or harmony or rapport which induces understanding, he asks and asks until he finds out where the seam has ceased to fit . . . just as does the

psychoanalyst.

The white man may be amused that the thigh bone of the wildcat is used for earache, the owl's feathers against illnesses caused by ghost or "love trouble," and a bundle of ocotillo sprouts against baldheadness, which is serious, for "if you get baldheaded it goes down to your heart and causes heart trouble."

But the serious white man cannot but wonder what the medicine-man uses against rabies. Something is done but no Papago will tell. A few years ago an Indian woman was badly bitten and chewed by a "mad" coyote . . . which was killed and its head sent to the Arizona State laboratory where its brain was reported to contain Negri bodies. The woman refused the Pasteur treatments by the white doctor on the reservation, preferring aid from the medicine man of her village. The white doctor, as a rule, is never able to make contact with the medicine-man. Weeks went by, her wounds healed quickly. Months went by and she showed no symptoms of human rabies. What happened when the medicine-man treated her?

"Our treatment is all right for Indians, but it would not do for white people," an Indian girl answered when questioned. "The medicine-man draws a circle — but I cannot tell you," she broke off suddenly on the verge of revealing what happened.

Something is done, however, for there have been too many cases of "mad" dogs and coyotes to shrug off the matter. In northern Sonora the Papago people cut and burn crosses in their dogs' foreheads during a medicine-man's treatment after the dogs have been bitten by mad animals. There, and on the southern Arizona reservation the people receive some strange treatment about which white men know only that it begins "with drawing a circle!"

What about smallpox? A few years ago when the reservation had a smallpox scare, nurses and doctors had no difficulty vaccinating 400 children. The Indians knew all about vaccinating. All the elders proudly displayed on their wrists scars from their own vaccinations.

They either couldn't or wouldn't tell us how many, many years they have been vaccinating themselves. All the old people agreed it had been 'many years.' They inform us that their medicine-men take the well Indians to the bedside of a person sick with smallpox. There the medicine-man dips a devil's claw into a pustule on the person's body and then draws the claw over a small scratch on the well person's wrist. The result is a slight sickness for a few days; but they say "it is better than white man's way; it doesn't make us sick."

Some of the Papagos have hinted that they learned vaccination from Indians in Mexico, who perhaps learned it from Mexicans. That could be historically correct for vaccination was known in early times. Records state that the Spainards brought smallpox to the Americans in the 16th century. They may also have brought the European peasants' system of vaccination. Perhaps the very priests, Father Kino, Garces and the many others, who introduced them to Christianity and smallpox, taught them vaccination. Who knows?

The Papago people are far keener than most believe. There are three kinds of medicine-men: those who treat diseases with natural herbs; those who chant and sing with a strange array of symbolic items to break the spells causing illness; and those called "bone doctors," who have established a reputation for efficient skill in setting bones, broken. All three are "Mah-kai Ootahn" or Papago doctors. Many of the Indians on the reservation still prefer their aids to white doctors, but slowly and gradually the white doctors are being sought. Nurses get their patients to more readily take white man's medicines by using the Papago name for the drug the medicine contains.

The "Mah-kai Ootahn" using herbs has a wide variety to choose from. Creosote, palo verde and mesquite provide favorite medicines. A tea made from a "girl" creosote root, boiled with fat and applied warm, is good for earaches. The creosote bush provides them their antiseptic and is used in powder form for sore eyes or open wounds, as a salve (with animal fat) for sores, the inner bark for de-worming and an outer parasitical growth becomes an opiate or sedative. Tea from creosote leaves is used to reduce fever, stomach ache, labor pains in childbirth and as a laxative.

Palo verde and mesquite have as many forms and uses. But in addition there are: manzanita tea to induce labor pains; burnt wheat seeds to cure burns; saguaro seeds in a gruel for sick babies; "alle gugul" root for cramps and afterbirth pains; cachanilla used as a cure for syphilis; snake weed tea for snake bite; night blooming cereus for bladder trouble and diarrhea; tansy mustard seed for a stimulant and appetizer.

Many of these plants are also used for foods as salt sage for seasoning; jellies from all the cactus fruits; buds of the cholla pickled as a relish and as a salad; saguaro fruit as a syrup, jelly and candy; and the seeds for a sweet cake; pepper grass seeds or "shohowat" as lemonade-like drink, and pumpkin seeds parched, salted and eaten as nuts.

The bone doctor has a whole series of efficient splints for all meanner of breaks in bones. These are fashioned from saguaro ribs, polished very smooth so they will not make flesh wounds, and shaped to fit wrists, upper and lower arms and legs. What they can do with broken collar bones, skulls, spines or hips is guesswork on the part of nurses and doctors.

The equipment of the medicine man who chants and sings is almost the most interesting. His basket of symbolic cures and spell breakers is no less sensible than the cures used in England in the 17th century when toads, snakes, dung, minerals and many others were mixed into liquids and taken internally.

On the word of one of the medicine-men some of the most potent and dangerous items have great power. In fact, their power is so tremendous that all the articles must be wrapped in rawhide and not touched except by a medicine-man. These items include a deer's tail used for "the headache that goes through the eyes to the brain"; "newee" or buzzard feathers, used against boils; hawk's feathers or "visak" for nosebleed; "kahuan" or badger clay for swelling of neck glands; a crystal stone for heart trouble, fatigue and loss of appetite; eagledown for rain making and Tizwin ceremonies; "Moh-k," or a lock of Apache hair taken by the native who killed the Indian and used by the medicine-man to keep the killer safe "unto three generations" from the sickness which the dead Apache might visit unto him and his descendants.

There is an amusing and truthful story told on the reservation about one of the attempts to cure a sick man from a ghost illness. The medicine-man went to the sick man's hut only to hear him say: "It is no use. Let me die. I did wrong to a man now dead. He brings me sickness." He had it bad, and that's not good. The medicine-man learned the location of the grave and said he would placate the restless, mean spirit causing the illness. He set off to the grave with some assistants. But a group of boys had overheard, and since they knew how Americans celebrate Halloween, they too sashayed toward the site in the dark. As the medicine-man approached the grave, alone and chanting, to his terror a grinning, yellow face shot-up over the grave. He screamed in horror and fled back to Sells, leaving behind the urchins and their delighted pumpkin. Whether the sick man recovered is not known.

Owl feathers are also used against illness caused by ghosts that trouble the living, producing heart trouble or "love mania." The feather is used in connection with a carved symbol of a man to represent the ghost.

Some of the Indians believe that "sea-foam" or "shu-dtak" is good for "inside pain" and "horse's sickness." The medicine-men claim to secure the solidified sea-foam from the Gulf of California, but it looks more like a piece of porous skull bone. Rabbit tail is used against "that kind of sore" or cancer. Butterfly and sun symbols also have their purposes, as does a quail skin stretched over a dime store chicken, which is said to relieve eye trouble. Of course, there is the ocotillo sprouts bundle for the baldheaded. The sprouts are the symbol of a porcupine and "one must never see a porcupine face to face or look at him," for more than health reasons.

A twist of hair from a wild horse's tail is a foil for insanity, as "insanity is likely to attack anybody working around horses" and the devil takes the man who works with horses. Rattlesnake weed and La Golondria plants have been investigated to learn their efficiency in curing rattlesnake bites. It has been shown that canutillo plants contain ephedrine, which always has been imported from China. It is this shrub which is used for syphilis, rheumatism and other ills.

To me the study of the Indians has proved an endless fascination. Their reservations extend for many miles across the cruel splendor of a barren land. And so it reaches . . . vast, silent, mysterious.

I watched an Indian gazing into the distance. His narrowed eyes surveyed the vastness steadily, his chin uplifted. His profile seemed to me equivalent to the rugged land smoothed by space. In this sombre figure I saw the calm dignity of their race. The loneliness, the enforced simplicity, and the precariousness of life faced with perpetual drouth have made them sturdy and resourceful, and have implanted in them an abiding sense of the tragic nature of man's fate.

Thioridazine (Mellaril) In General Office Practice

by

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IN THE past six years a group of drugs known as tranquilizers have been introduced into medicine for the treatment of neuroses and psychoses. Some brief comments on these psychotropic compounds will be made regarding their chemical structure and pharmacological properties as well as a classification of these psychopharmacologic agents, as follows:

1. Those derived from phenothiazine
2. The rauwolfia alkaloids
3. Those derived from diphenylmethane
4. Glycerol derivatives

The phenothiazine derivatives are considered by many as being among the first tranquilizers for the treatment of emotional disorders. The rauwolfia alkaloids, which are considered to be among the early tranquilizer drugs, are not used as widely today in the treatment of emotional disturbances as in the past. The phenothiazines appear to have replaced the rauwolfia alkaloids for the treatment of central nervous system disorders, but their use still plays an important role in the treatment of hypertension. The diphenylmethane derivatives appear to have several pharmacologic actions such as tranquilizing, antihistaminic and anticholinergic. The glycerol derivatives are considered as tranquilizers but originally were muscle relaxant drugs.

This report is concerned with Thioridazine (2-methylmercapto-10-[2-(N-methyl-2-piperidyl) ethyl]-phenothiazine),* a new phenothiazine which appears to be unique as a phenotropic drug because it does not produce the usual extrapyramidal symptoms, and no cases of true Parkinsonism, blood dyscrasia or liver damage have been reported. Thioridazine differs in some aspects chemically from the usual phenothiazines because of the substitution of the thiomethyl group in place of the halogen which is ordinarily situated on the main nucleus, and the substitution of the piperidyl radical in place of the piperazine or dimethyl radicals on the side chain. It is said that the substitution of the thiomethyl group and the piperidyl ring accounts for the difference in action of Thioridazine (see Figure I.)

Courvoisier et al.(1) showed in animal studies that Mellaril does not produce catalepsy in various animal species when compared with other phenothiazines. Taeschler and Cerletti(2) showed pharmacologically that Mellaril depresses the temperature-regulating mechanism to a much lesser degree than other tranquilizers,

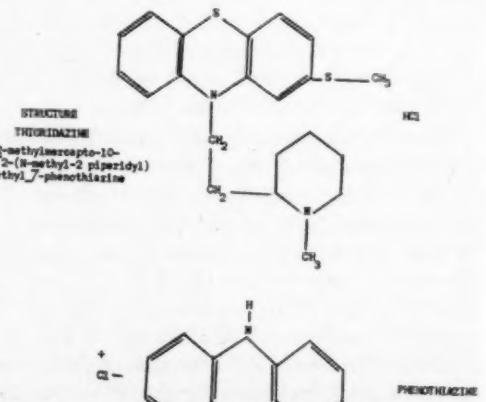

Figure I

*Available as Mellaril from Sandoz Pharmaceuticals

that it inhibits motor activity due to fasting or in amphetamine-induced hypermotility, potentiates anesthesia, reduces emotional tension of the "flight reflex." It does not have a pronounced anticholinergic and antihistaminic effect, it has moderate adrenolytic and spasmolytic effects and does not posses a significant antiemetic effect. Haley et al. (3) reported that Thioridazine has adrenergic blocking effect, is slightly antihistaminic and has very weak atropine-like activity but no ganglionic blocking effect. Swinyard et al.(4), comparing Thioridazine with Chlorpromazine, showed that Thioridazine abolishes conditioned escape response, reduces amphetamine toxicity, decreases spontaneous motor activity, lowers body temperature, reduces the low frequency electroshock seizure threshold, prevents the tonic extensor component of maximal audiogenic seizures and prolongs hexobarbital sleeping time. In their experiments, using large doses of oral Thioridazine in mice, there is a difference in the dosage of Thioridazine and Chlorpromazine required to produce overt evidence of minimal neurotoxicity. They found that Thioridazine is approximately half as toxic as Chlorpromazine.

Kinross-Wright(5, 6) reported his results with Thioridazine in a large series of institutionalized and ambulatory patients. He found Thioridazine to be well tolerated, and that it exhibited no toxicity in the dosage range employed. He was particularly impressed with the absence of Parkinsonism and other extrapyramdial symptoms, and no cases of blood dyscrasia or liver damage were observed.

Glueck(7), Cohen(8), Remy(9), Ostfeld(10), Clark(11) and Haug(12), also found that Thioridazine is a potent phenothiazine and that it is singularly free of troublesome side effects.

METHOD

Fifty-two private ambulatory patients were selected for observation. All had functional complaints due to anxiety and a few also had organic disease. Fifteen patients were male with an age range from 14 to 65 years, and 37 were females with an age range from 20 to 84 years. A double-blind technique was employed with three dosage forms: 1. One group containing 10 mg. tablets of Thioridazine and placebo. 2. Another with 25 mg. tablets and placebo, and 3. A third group with 50 mg. tablets and placebo. Each patient was directed to take one tablet of the dosage form after each meal and return visits were scheduled at 2 to 3 week intervals to observe the results and to replenish the medication. All patients were started on Thioridazine or placebo in random fashion and the different strength tablets were used in ascending order. Neither the patient nor the physician knew which was the therapeutic tablet or placebo. While it is true that a fool-proof double-blind study is difficult to achieve, especially in the treatment of functional complaints, it is the best available procedure for the objective evaluation of a chemotherapeutic agent. It is felt, however, that the random administration of a coded drug and placebo, the use of progressive dosage and consideration of other factors such as environment,

TABLE I

RESULTS WITH MELLARIL (THIORIDAZINE)

DIAGNOSIS	NO. OF PATIENTS	AGE	MELLARIL RESPONSE	PLACEBO RESPONSE	DOSAGE & DURATION	SIDE EFFECTS	
						MELLARIL	PLACEBO
Fatigue (not induced by exertion) - 45	52	14 - 65 (male)	MALES: GOOD 14, POOR 1	MALES: GOOD 3, POOR 12	30 to 75 mg. daily	4 cases of drowsiness	1 case of vomiting
Insomnia - 36	MALE 15	20 - 84 (female)	FEMALES: GOOD 34, POOR 3	FEMALES: GOOD 12, POOR 25	2 to 6 months - average 3 months	1 case of vomiting	
Vague digestive disorders - 18	FEMALE 37						
Anxiety and apprehension - 46							
Severe tension headache - 2							
Duodenal ulcer - 2							
Hyperpiesia - 4							
Alcoholism - 2							

psychotherapy, etc. have, in the main, precluded misinterpretation of results in this series.

The duration of therapy was from two to six months. Many of the patients had more than one symptom and the conditions treated included fatigue (not induced by exertion) and insomia, vague digestive disorders, anxiety and apprehension due to various causes, severe tension headache, duodenal ulcer, hyperpiesia and alcoholism. The relief of symptoms with Thioridazine was noteworthy in the majority of patients without producing side effects which interfered with therapy. It was observed that relief was almost in direct proportion to the dosage of Thioridazine employed. In some cases, 10 mg. after each meal resulted in a relief of symptoms. When the dosage of Thioridazine was increased to 50 mg. three times daily, there was a relief of anxiety but a few mild reactions occasionally followed. Twenty-five mg. tablets after meals invariably produced good results, and practically no side effects. (See Table I).

SIDE EFFECTS

One female patient experienced vomiting with 25 mg. tablets of Thioridazine; another female patient vomited with a placebo, and there were three cases of drowsiness, presumably due to excessive dosage. The drowsiness resembled the delayed mental and motor activity often seen after moderate doses of barbituric acid drivatives. The drowsiness subsided completely about 24 hours after medication was discontinued. It is noteworthy that there was no evidence of Parkinsonism or personality changes, and no cases of jaundice or photosensitivity. Routine hemograms, urinalysis and other laboratory tests were normal before and after therapy. Blood pressure levels were not significantly changed except in three patients with hyperpiesia whose blood pressure was reduced about 30 to 40 mm. Hg. systolic and 5 to 10 mm. diastolic. These patients previously demonstrated about the same reduction in blood pressure with other tranquilizers. One patient with hyperpiesia was much less tense and slept better with Thioridazine although his blood pressure measured 180 mm. Hg. systolic. No cause for the hyperpiesia could be found.

DISCUSSION

The availability in recent years of numerous psychotherapeutic drugs, especially the phenothiazine derivatives, for the treatment of functional disorders and for relieving the emotional component in organic disease, represents one of the great advances in therapeutics. The multiplicity of phrenotropic drugs, many related to one another, with similar claims, has created a confusing situation for the physician. Welsh(13) has stated that the real objective of psychotherapy with drugs is to induce an improved mental state, irrespective of what subjective symptom or objective sign is being treated. This should be done with agents that produce no undesirable subjective responses, are lacking in toxic side actions and exert no summative effects with other drugs unless the latter are beneficial. Thioridazine was chosen for this study because of the reported wide margin of safety. This was borne out in this study.

SUMMARY

1. In a double-blind study, 52 ambulatory patients were given Thioridazine for a variety of functional disturbances for a period of 2 to 6 months.

2. Thioridazine, in doses of 30 mg. to 75 mg. daily, after meals, was well tolerated. It relieved anxiety, apprehension and other functional complaints without producing excessive sedation.

3. No cases of Parkinsonism, extrapyramidal symptoms, blood dyscrasia or liver damage were observed in this series of patients. Four cases of drowsiness and vomiting were presumably due to doses of Mellaril greater than required.

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CASE REPORT

Argentaffine Tumour of the Ileum

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and

I. S. Stewart, M.D.

Consultant Pathologist

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ALTHOUGH the argentaffine tumor of the small intestine is a rare lesion and the number of cases reported in the literature still less than five hundred, the reporting of an isolated case is no longer justifiable unless there is some feature of interest to the clinician. The case described here was seen first by a general surgeon, considered by him to be an ovarian lesion and was then handed over to the gynaecologist. As this has happened once, and in all probability on previous occasions the details may be helpful should it occur again.

Case History: A married nulliparous woman of 40 years attended the surgical clinic complaining of vague abdominal discomfort for some months. Her menstrual periods had been irregular up to the age of 38 but regular since. When examined she was found to have a hard mobile tumour in the abdomen. This could be moved up as far as the umbilicus and also down into the pelvis. Vaginal examination suggested that the tumour was attached to the left broad ligament and it was thought to be an ovarian cyst.

When examined by one of us (A. G.) these findings were confirmed and a diagnosis of ovarian cyst made.

Operation: The abdomen was opened through a lower midline incision. There was a small uterus bearing a small subserous fibroid. There were small cysts in the left ovary and it and the Fallopian tube were bound down by dense adhesions. There was a hard lump in the ileum about 90 cm. above the ileocaecal valve and three small hard glands were found in the adjacent mesentery. No metastases could be distinguished in the liver spleen. Approximately 30 cm. of bowel, including the tumour and the glands. was excised and an end to end anastomsis carried out. The left ovary and Fallopian tube were then removed. Convalescence was uneventful.

Pathology: The preserved segment of small intestine was 22 cm. in length. Near its centre the wall had been opened exposing a globular tumor 4 cm. in diameter. On the outer aspect an extension of equal size expanded the mesentery.

Sections showed what was considered at first to be a very active adenocarcinoma in which there were not only numerous clusters of aberrant glandular structures but also wide areas solidly packed with anaplastic cells with no structural arrangement. Subsequently however sections stained by Levaditis method showed that the tumour cells were packed with characteristic argentaffin granules. All three lymph glands contained tumour deposits which also gave these appearances with Levaditis stain. Control sections made from a known adenocarcinoma failed to show granules.

Discussion: These tumours are very slow growing and may remain stationary for long

periods (Cope, 1930). Over half of them are only discovered at autopsy and the great majority of the remainder develop symptoms of obstruction and require operation (Ariel, 1939). Over half of the cases show multiple growths (Willis, 1953). Rare events are the discovery of a painless abdominal mass, such as in this case, perforation (Cooke, 1931, Stewart and Thompson, 1951, Simpson and Stewart, 1959) and intussusception (Ariel, 1939, McCartney and Stewart, 1959). The secretion of 5 Hydrovytryptamine by these tumours, the "flushing" syndrome associated with it and the identification of the chemical in the urine in a modified form (Biorck et al, 1952) offer together a further means of diagnosis.

In at least one previous case (Simpson and Stewart) a jejunal tumour was felt in the recto vaginal pouch and had not the urgency of the condition demanded immediate laparotomy this patient might also have passed into the hands of the gynaecologist.

Summary: A case of argentaffine tumour of the ileum in a woman if 40 years was accepted as one of ovarian cyst by both surgeon and gynaecologist, the correct diagnosis only being made after operation and histological investigation.

Brief reference is made to the relevant literature.

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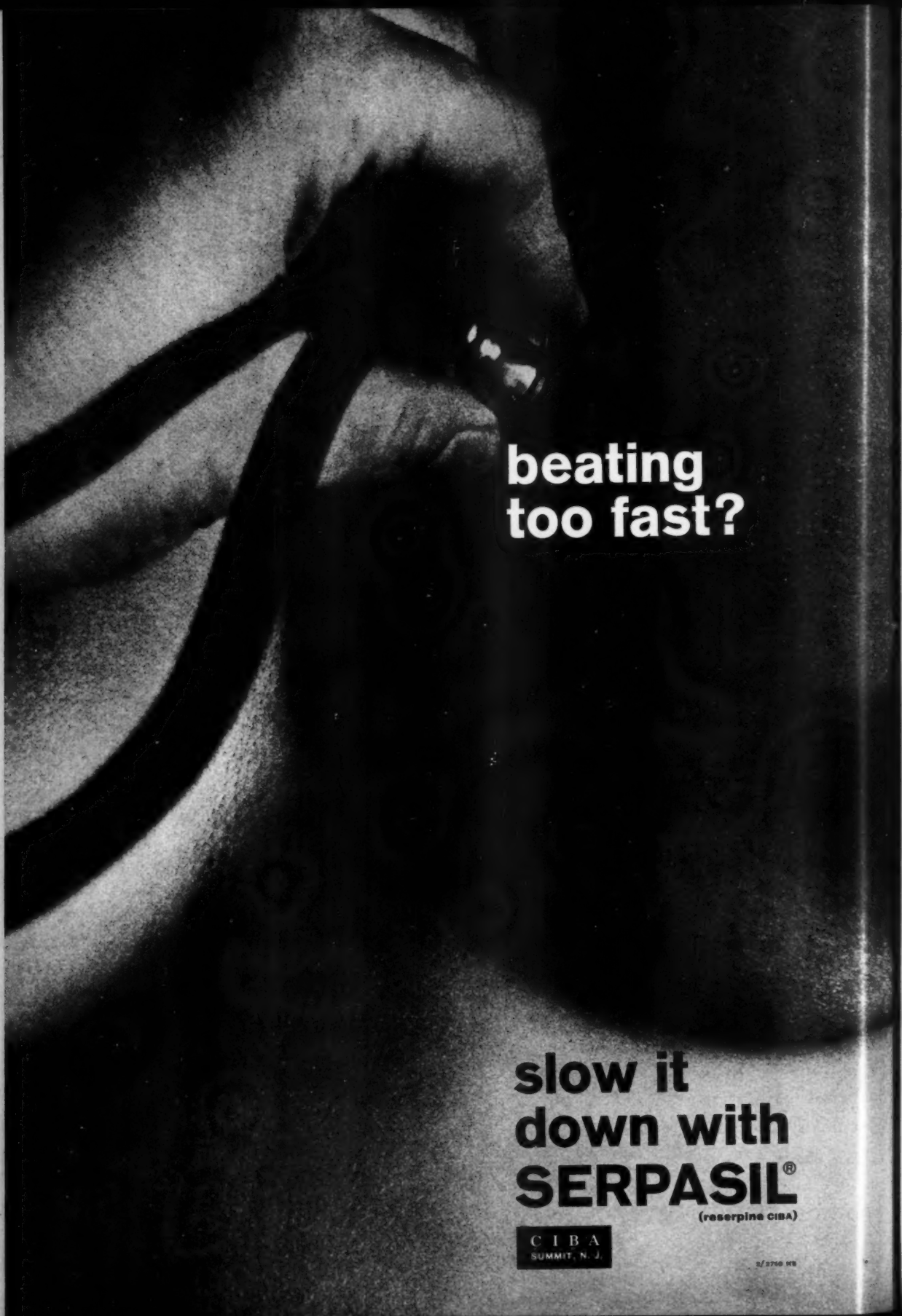
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Current Trends in Medical Education

Continued from October 1959*

The following panel discussion on Medical Education was presented before the guests and members of The Arizona Medical Association, Inc. on May 1, 1959, in the San Marcos Hotel, Chandler, Arizona.*

The guest panelists were as follows:

John Z. Bowers, M.D., Dean, University of Wisconsin Medical School.

John W. Cline, M.D., Moderator, Associate Clinical Professor of Surgery, Stanford University, School of Medicine.

Fred Dow Fagg, Jr., LL.D., Chairman, Western Interstate Commission for Higher Education.

Reuben G. Gustavson, Ph.D., President, Resources for the Future, Inc.

Walter L. Hard, Ph.D., Dean, State University of South Dakota, School of Medicine.

Harold Dalton Jenkins, M.D., Assistant Professor of Medicine, University of Colorado, School of Medicine.

Marvin E. Johnson, M.D., Assistant Clinical Professor of Surgery, University of Colorado, School of Medicine.

Vernon W. Lippard, M.D., Dean, School of Medicine, Yale University.

Thomas L. Royce, M.D., Clinical Assistant Professor of Ophthalmology, Baylor College of Medicine.

Thomas B. Turner, M.D., Dean, Johns Hopkins Medical School.

*This is the final article on the recent symposium on medical education. Within the next month all of the material will be printed into a pamphlet and submitted to the members of the Association along with other interested parties.

DOCTOR CLINE: We have a request for Doctor Turner to discuss more explicitly his institution's exploration and experimentation with a three-year medical college.

DOCTOR TURNER: We do not really have a three-year medical college. It is four years to the M.D. degree, but the curriculum has been rearranged so that some of the things that were formerly taken in the post-doctoral years may now be taken before graduation. We will have our first accelerating students next year. They will proceed more rapidly through the required portion of the curriculum, and in effect, save up elective time to the end of the schedule, so that instead of the prescribed elective time being taken during several years it will be taken in one piece at the end. During this period the student may take an internship, or a fellowship, or he may do research. We feel that this can be done without damage to the quality of their medical education. We regard it as in the direction of shortening the unduly long process from the beginning of college to the end of the medical residency.

DOCTOR CLINE: Thank you very much, Doctor Turner. There has been frequent mention of the value of a well established university as the basis for a medical school, "can you give a more precise definition of a well established university with high educational standards?" I will pass this question first to Doctor Lippard and then to Doctor Bowers.

DOCTOR LIPPARD: As you well know, among the universities in the country, no two are equally well established and most are still very young. If this quotation is from something I've said, what I had in mind was the type of university in which high standards prevail, in which the graduate school is developed to the point where there is a well established Ph.D. program, where there is an atmosphere of scholarly interest and active participation in research, and where there are other graduate and professional schools. A good medical school is not a trade school, or vocational school attached to a hospital, but a graduate school in the atmosphere of a university. A good medical school improves that atmosphere and is improved by it. That's about as far as I can go.

I think you know what I am talking about.

DOCTOR BOWERS: Doctor Cline, I would interpret this in about the same way as Doctor Lippard has. I would say that a well established university is a university that commands respect at both the local and the national level for its educational research and service accomplishments. I would emphasize respect at the national level, because the recruitment of faculty in medical school is not easy. Some of the best possible men are sincerely interested in coming to medical schools that are affiliated with universities which have distinction.

The other point that I wuold make is perhaps a bit of elaboration on a point that Doctor Lippard made. I would be particularly interested in a university that had a well established graduate school, because in a well established graduate school are scientific and technical resources that can be of inestimable value to a medical school. So I would say national respect and a well established graduate school would be two facets that I would be eager to have available.

DOCTOR CLINE: Would other members of the panel care to comment? With reference to all these questions, I hope that you will all feel perfectly free to pick up the microphone and say what you wish.

Another question is, with an explanatory note, one of the objectives of establishing a medical school is to raise medical standards. Wouldn't a flooding of the State with graduates of a poor school lower these standards? Who wishes to take than one on? If nobody else wants to do it, I'll answer it.

I don't believe you could have a poor medical school. If you were to establish one, the Council on Medical Education and the Executive Council of the College Association would simply not permit that sort of a medical school to be accredited. If it started out in that fashion, it would have to improve before it could obtain accreditation. Does any member of the panel wish to disagree? If you had an adequate amount of money, (1) what time would you estimate would be required to assemble and start a medical school? (2) When would you estimate you could recommend to your son as a student to attend this school? May I give this one to Doctor Turner?

DOCTOR TURNER: With regard to time, I think Doctor Lippard has already answered this; I believe he set a minimum of four years from the time land was acquired. The real key to all of this, however, is the assembling of a faculty. I think you can write certain rules and objectives but in the final analysis the quality of the faculty will depend first, on whether your university objectives are high enough to attract good men to this environment. It will not rest on salary, primarily. A difference in salary of two or three thousand dollars is not going to determine whether a man comes to your university or not.

Secondly, the success of your school will depend on someone with a gift for spotting able young men. All of the good medical schools have had such persons. In the early days of Johns Hopkins, Doctor William H. Welch was extraordinarily successful in picking an outstanding faculty. Many other examples could be cited.

The second question was, would I or would you send your son to such a new medical school? The answer to this question depends upon how you handle the problem I have just discussed. The fact is that some of our most exciting and finest medical education has come out of new schools. So I think the quality will be evident from the very beginning and if the quality is there it will appeal to the first-rate students, and if it is not, it will not appeal. It's just as simple as that.

DOCTOR CLINE: Are there other members of the panel who wish to comment?

DOCTOR BOWERS: I think that there are many excellent men in medical education today who would be intrigued by the opportunity to join the faculty of a new medical school as Doctor Turner has indicated. It is important to realize that Arizona should have just as good a medical school not only in education, but also in research, as any medical school in the country. I would say that categorically, because the time has passed when medical research was concentrated in a few large institutions now by the access to research opportunity, primarily through the funds from the United States Public Health Service, any medical school really can be productive and creative in medical research. Say what you will about medical research, it is the thing that attracts faculty and attracts support today, you simply can't avoid it.

DOCTOR CLINE: Doctor Lippard.

DOCTOR LIPPARD: In reference to the at-

mosphere of a new medical school, I think one of the most exciting experiences I've had in recent years has been to visit some of these new medical schools in which they have assembled a group of comparatively young, not too young, men with experience, who recognize the challenge of putting together a curriculum and building something that they would be proud of. The atmosphere at some of those schools is really very much better than in many of the old ones, where they are gradually trying to overcome deficiences which are deeply established. I think it's entirely conceivable that a State such as Arizona, if it went about it in the right way, could have a first-rate medical school in a comparatively short time.

DOCTOR CLINE: Doctor Lippard, may I ask you a question, or rather ask you to comment upon the planning of two recent medical schools; namely, the University of Florida and the University of Kentucky as examples of the proper and gradual process of planning the establishment of a medical school.

DOCTOR LIPPARD: Let me start with Florida. If this gets to be somewhat autobiographical, you'll have to excuse that. My first contact must have been in about 1949. The Governor and the State Legislature asked me to come down there and spend some time talking to people and to write a report for the Legislature, which was to meet about six weeks later, on whether they needed a medical school, if so how they should go about it, and where it should be located. It didn't take long to find that the question they really wanted answered was the last one, because the competition was not between two cities but between five or six. Not knowing quite where to start, I wrote letters to the Secretaries of the County Medical Societies in which each of these several communities was located, thinking that you can't just arrive on the main street and start looking. I found as I arrived at each of the several cities that I was greeted at the airport, not by the Secretary of the County Medical Society in most instances, but by the Secretary of the Chamber of Commerce. It was quite obvious that this was a battle in which the medical profession played a minor role. My report recommended that the school be established in association with the University of Florida at Gainesville. That recommendation was accepted by the Legislature a few weeks later and it appropriated the funds for initial planning.

The next step was solicitation of funds from the Commonwealth Fund for an extensive survey to find out what kind of a school they should have and its relation to the rest of the University and the State. Now I think in terms of good planning it would have been better if that extensive survey had come first, before the decision regarding the location and so on had been made. This resulted in a long and excellent report which Doctor Poor wrote and which in many ways determined the character of the school to be established. I'm a little hazy about the dates, but somewhere within the next two or three years they had completed the architectural plans and began construction of the basic science building. They planned the whole thing as a unit and then got money from the Legislature in two pieces to build first the basic science building and then the connected University Hospital. It took about two years for construction of this first unit. They appointed a dean before the building was started, and he soon had with him a hospital administrator and one or two other people. By the time construction of the basic science building was completed, he had chosen the chairmen of all his preclinical departments and at least the complete faculties of those departments which were concerned with instruction in the first year. They were on the ground several months before the school opened. By the time the second year approached, they had the faculty of the second year completed and had appointed one or two of the chairmen of the clinical departments. By the time the third year was under way, they had opened their hospital. They have not yet graduated their first class but will have done so about ten years from the time the initial decision to establish the medical school was made.

In the establishment of a medical school in Kentucky, in which I also had a hand, the Legislature had already decided to establish a school on the campus of the State University. The President and Board of Trustees were instructed to go ahead with it but didn't quite know where to start. A couple of us went down and spent a weekend and talked with the Trustees, the Governor, the President of the university and members of the faculty. We told them the first thing to do was to appoint a good dean, turn it over to him and not rely upon a lot of visiting firemen. They appointed a good dean and the school

has made excellent progress. I'm hazy about dates, but I guess they broke ground about two or three years from the time that they made the original decisioin to establish the school. The basic science building is now well under way. Some of the chairmen of the basic science departments have been appointed and will be in residence while the building is under construction. They will admit their first class of students in the fall of 1960. The hospital, I believe, is now under construction and they will probably have it finished by the time their first class finishes its first year, which I think is a better schedule than the one they followed in Florida. The hospital will be in operation for a year or so before they have clinical students. No matter how you go about it, it takes a minimum of eight years from the firm decision to establish a school to graduation of the first class. One should not plan on much less than four years from the time the decision is made until the first class is admitted.

Some schools have gotten off to a poor start because they didn't take time for proper planning and construction. As a result, my guess is that at the end of ten years they'll be less well off than the schools which went about their organization more deliberately. For one thing, the recruitment of faculty is influenced. The atmosphere that they established at the University of Florida was such that a lot of good people were interested in being a part of it. They had little difficulty in recruiting a first-rate faculty. They are having the same experience at the University of Kentucky. I don't think a school started off on six months notice can be equally successful in that regard.

DOCTOR CLINE: I do not mean to ask you to make a comparison, Doctor Lippard, but you did, I believe, in the course of your remarks draw a comparison between the University of Florida and the University of Kentucky. The University of Florida made its plans, then obtained a sum of money to conduct a survey from the Commonwealth Foundation which would bring in other people and you considered this was a wiesr procedure than that followed in Kentucky.

DOCTOR LIPPARD: The situation in the two states was quite different. In Kentucky previous consideration over a period of years had led to the conclusion that a school was necessary and that it should be located at the State University. In Florida, there was uncertainty as to the need for a school and competition for its location. Consequently, they had to proceed more slowly. In any event, a careful study should be made, either by a commission prior to the initial decision or by the dean and his associates before construction and curriculum planning are started. I think the best solution for Arizona would be to have a careful study done before the State Legislature makes up its mind as to whether it should establish a school and where.

DOCTOR CLINE: Are there other members of the panel who would like to comment? If not, then I will pass this question to Doctor Hard. "How difficult is it for good students to get into medical school at this time? Is there a backlog of such students?"

DOCTOR HARD: I think that some of the other members on the panel who will necessarily be receiving applications from perhaps a different group of students than we are apt to receive from, should also properly answer this question. I did make reference this morning, however, to the suggestion that it would appear that any qualified student could find access to a medical school today. I believe this to be true. The figures just received in my office from the Association, just prior to this meeting, suggested some 600 less medical applicants for the present '58 class than for the preceding class, would bring the total number of applicants down to something approaching a two to one ratio of applicants to places available. This suggests to me that the qualified candidate can get in. Our Association also keeps the medical schools informed from month to month of the candidates who have been accepted in medical schools throughout the country. We keep a running check in our office on all of our applicants to identify those who have gained admission to some other medical school, and in turn we have reviewed their applications again to see what we may have missed or what sort of a student this was who may have been admitted to another school. I haven't the figures for this present year since it's not quite complete. My figures for last year would be relative, but at least one out of three, one out of two and a half of all of our applicants would come up in some medical school. I would have to say that with the balance that didn't, probably medicine is just as well off if our evaluation techniques are worth

anything at all. Perhaps some of the others would like to comment.

DOCTOR CLINE: Would any of the Deans care to comment?

DOCTOR LIPPARD: I think we ought to keep in mind the fact that we're talking about planning for the future. At the moment in 1959, we're admitting to medical schools students who were born in about 1937. Remember that was the height of the depression and the low point in the birth rate. Within five or six years, we're going to be dealing with people who were born after 1940, at which time the birth rate took a sudden spurt. The estimates are that the number of students graduating from college will increase enormously in these next few years. As I recall, there are expected to be by 1975 some three million more students graduating from college than there are at present. It's hard for me to conceive that out of three million more students graduating from college, we can't pick up 3000 more students for medical schools.

DOCTOR HARD: Might I add one more observation, since I have a suspicion that question may have been focused on whether or not all qualified students from Arizona for example, can be accommodated. Doctor Bowers made a very revealing statement this morning, citing the increased number of applicants from Utah when they expanded from a two to four-year school. I'd just like to emphasize that on the basis of your college enrollment in Arizona, and on the basis of our experience in South Dakota with the two-year school, it would be my prediction, that the existence of a medical school now, whether two or four-years is inconsequential, would jump the number of interested students in Arizona, a very sizable amount. This is the number that one ought to conjecture whether they could be accommodated in a medical school or not.

DOCTOR CLINE: Would anyone else on the panel wish to comment?

DOCTOR TURNER: I will merely emphasize Doctor Lippard's point that the tremendous pressure will come eight to ten years from now, both population wise and from the standpoint of the number of students seeking admission. There will be a great many more potential medical students in the country in ten years.

DOCTOR BOWERS: I think that this has an impact on the Arizona problem, which is implied but should be re-stated. That is, that at this time Arizona is dependent upon other schools across the country accepting your applicants. If the tidal wave of medical students that anyone confidently anticipates occurs, well-qualified Arizona students are going to have increasing difficulty getting into medical school. It seems to me that this is something that in your long-range planning you must have very clearly in mind. What can we do to assure that in ten years from now the well-qualified young men and young women of Arizona will have a splendid opportunity for medical education?

DOCTOR CLINE: If there's no further comment from the panel, Doctor Hard, approximately how many third and fourth-year vacancies do exist for medical students? Are they in good, recognized medical schools?

DOCTOR HARD: It might be well if I emphasize just a little bit on some of the remarks I made this morning to fill in some of the gaps that may have been left. The South Dakota school has never had the problem of transferring any student. There was one student back about 12 years ago that didn't get transferred. I still wish some medical school would take that boy. He is now an extremely successful Doctor of Osteopathy. Because then I could categorically say, "Never in the history of the school have we failed to transfer a student!" This particular student was assigned to the school, and it was before my time, by a naval program. He had flunked out of a previous medical school and that explains the whole situation. Again then there is no problem; there has not been a problem. As Doctor Cline pointed out, and I think the other Deans would immediately agree, it's impossible for me to rank any of these schools and I doubt very seriously if any member of the panel can rank them. We know that Yale is good. We know that Johns Hopkins is good. We know that Wisconsin's good. And South Dakota has got a two-year program that will equal any of theirs, so we're all in agreement. The point is, our students will transfer almost indiscriminately to almost any school in the country and have in the past and I hope will continue. The process of transferring is almost as automatic as our simply contacting a dean, "We have a student interested in your school. This is the record he has compiled, this is his background, are you interested in taking him?"

I did emphasize a couple of problems that do exist which make me temper my evaluation of the number of vacancies that exist. Every school wants the best material, but there is a bottom half and a top half of the class. We have had extremely successful relations with numbers of schools, getting the school to pair our students off. Take two from the top, two from the bottom half. Everybody is happy. Again, I emphasize and it is a problem that only needs some work done at the medical educational level with reference to National Boards. Since there are some 29 schools requiring them, our students cannot wait, they would be nervous wrecks waiting until July to find out whether they passed the National Board and, therefore, few students apply for transfer to one of these schools. But these again are problems which have a resolution and will be resolved and certainly there's every reason to believe that students make the reputation for your school. This is the reason we have no problem.

DOCTOR LIPPARD: Doctor Hard's mention of the lower half of the class reminds me of the story I heard the other day. A student came to the Dean of Yale College to ask some special privileges. The Dean said, "Well, now where do you stand? Do you stand in the upper half of your class?" He said, "No sir, I'm one of those who makes it possible for others to be in the upper half!"

DOCTOR BOWERS: I think one part of the question to Doctor Hard was about the number of openings for transferring medical students in the country. The Liaison Committee between the AMA and the AAMC questioned medical school administrations, I think, approximately one year ago. At that time it was estimated, and this was a very gross estimate, that there were between three and four hundred openings in junior medical school classes around the country for transferring students. As you know, today the major mortality academically occurs during the first and second years.

DOCTOR CLINE: This question is addressed to any and all of the panel. "Are the college premedical schools harder today than 20 years ago?" And the second half of the question is: "Is medical school harder today than 20 years ago?" Who would like to undertake that one? I can say, I am glad I am not a medical student today.

DOCTOR TURNER: I cannot speak about pre-medicine in any informed way. Medical school is more difficult simply because the whole standard of preparation has been upgraded. As Doctor Cline suggests, if I were in school now it would be extremely difficult for me, but if my son were in medical school it would be no more difficult for him today than it was when I was in medical school. Moreover, I would go further and say that I think the screening processes are so good that at most schools students rarely fail or drop out for academic reasons. We pride ourselves on the fact that no student has ever had to drop out of Johns Hopkins for financial reason. Usually failure is due to emotional difficulties or lack of motivation for medicine.

DOCTOR GUSTAVSON: The sciences, and physics and chemistry in particular, have gone from a descriptive type of course to one which is based on mathematics. The concepts of physical chemistry are used in all courses in chemistry. The kind of qualitative analysis that the student took 20 years ago today would be called nothing but cookbook chemistry and today is not acceptable. So I think that whether it's harder or not as hard is purely a question as to whether the student is prepared and capable of doing work that is not heavily weighted on the descripitve side.

DOCTOR CLINE: Thank you very much, Dr. Gustavon.

DOCTOR TURNER: Mr. Chairman, may I make one more comment? As many of you know, we are beginning to select and take in a few students after two years of college. This has made us, for the first time, look at the high school education of our applicants and we find some very interesting things. Some boys who have a fairly good record in college have had an extremely mediocre and even poor high school experience. The better ones have had a very good high school education. I believe that the medical schools and perhaps all professional schools will begin to put more pressure on the high schools to give a good, rigorous education in mathematics and in English and in at least one foreign language.

DOCTOR CLINE: Doctor Fagg, here's a question I think which is very pertinent. "Are the facilities for medical education in WICHE adequate for the future? For how long?"

DOCTOR FAGG: Fundamentally, the WICHE program is based on the idea of our taking students wherever there is space available and when somebody mentioned a one out of two application ratio it amazed me, because at the University of Southern California and at Northwestern, with which I am more familiar, the ratio is one out of fifteen students applying, not one out of two. At the University of Southern California we have a normal class of 68 medical students. May I say that practically none of them fails because of the care with which they are selected. We normally have about 900 students apply for those 68 posts for any individual year. If we take the growth in population that is expected in the west it might be interesting for you to know what is anticipated. In 1950, in our western group of states, there were 19½ million. In 1958, there were 25 million. In 1970, we anticipate 35 million. In 1980, 40 million people. Without any question, WICHE will continue the student exchange program for several years. There is certain to come a time when the pressure of population growth will force each state to reconsider its own problem. Just when that will happen is subject to your guess as well as mine. However don't think for a minute that it's easy to get into all the medical schools. The only place that I know of where there is really any set of vacancies is in some of the medical schools in the third and fourth year classes. In the entering classes, it's going to get tighter and tighter.

DOCTOR CLINE: I think there are some places in which the admission to the first year classes is on an unsatisfactory basis due to the decision of the State Legislatures to require that only bonafide residents of those states be admitted or where they require that a preference be given to such residents. There are some states in which there are not enough well-qualified applicants, and yet those medical schools are not permitted to take any large numbers of out-of-state students in the first year because of these restrictions. There are certain vacancies which are not available to these students and yet they count in the total number of vacancies.

DOCTOR HARD: Doctor Cline, we should make it very clear what and who we are talking about here. My reference was to the actual number of applicants, not to the number of applications submitted. It's true that Northwestern will have 1,400 or 1,500 applications, or at least I have heard that figure. We alone processed more than 300 this year. However, the average applicant applying to South Dakota is submitting eight other applications to other schools. The total number of applicants will be about 15,000. The total number of applications will be 70,000.

DOCTOR CLINE: There are some questions here concerning a two-year school. These questions are directed to Doctor Bowers. "If a two-year school would be planned, should a four-year school be planned at some future date or should such plans be made after the experiences of a two-year school?" The second question which you could answer at the same time, "Do you feel a medical center should be established in a two-year school as well as in a four-year school?" The third question: "Is there anything wrong with establishing a two-year school if things are inadequate at present for the more expensive four-year school especially in the face of the explosive increasing population and the basic need for more medical schools? Is it easier to change from a two-year to a four-year school than it is to start a four-year school from scratch?"

DOCTOR BOWERS: I will be the devil's advocate or whatever you wish to call it and this is no reflection upon the excellence of the two-year medical program at South Dakota, by saying that I think whenever possible one should start a full four-year program at the beginning within the framework of a medical center. I think that the additional cost will be more than justified in the long run. I would say that in time of great financial crisis and emergency that a two-year program might be justified. But at the beginning there should be plans made and laid for moving as promptly as possible to a full four-year program. As far as problems in transition are concerned I think that at times one may want to make some changes in faculty, and changing a medical school faculty can be a rather difficult problem. In a movement from a two-year to a four-year program, one may want some different kinds of people in the basic science department than is true when one is running the two-year program. I think there are many other problems, but these are just a few. I would say categorically again, I think Arizona ought to think very seriously about the full four-year program in a medical center.

DOCTOR CLINE: I think specifically the

question, however, was if a State does not feel, and it's not pointed at Arizona necessarily but we presume that is what it means, it is financially able to undertake a four-year school as of the present time, are there objections to their starting a two-year school and what planning should be done beyond that point?

DOCTOR BOWERS: I said that I think that in times of financial crisis or impossibility, that a two-year program would be completely justified, but that the location of the two-year program should be such that at that site, one could move promptly to the full four-year program.

DOCTOR CLINE: Would any of the panel care to comment? Doctor Lippard.

DOCTOR LIPPARD: No, I have very little to add because I agree with what Doctor Bowers has said. I think it would be very short-sighted to establish a two-year program without having a very clear plan for its development into a four-year school, in terms of physical location, in terms of building, in terms of selection of faculty and everything else. Any state which can afford to establish a two-year program in 1963 will by 1970 or 1975 probably have the resources necessary to go the whole way.

DOCTOR HARD: I would just add a little personal experience to second the remarks that have been made. In my mind it's an open question whether South Dakota will ever be in a position to support a four-year school. One of the factors which strongly precipitated the defeat of the development of a four-year school some 12 years ago was the inability to work out a clinical arrangement with existing hospitals in the only center in South Dakota where we could conceivably locate, that is Sioux Falls, with a population of around 60,000 to 70,000 and a drawing area perhaps of 150,000. Now with the two-year school on the campus at the University of South Dakota, it would virtually require, it seems to me, the development of a complete medical center in a community of 5,000 people, which is hardly realistic to me at least. On the basis of this situation I certainly concur that the planning should include the area of clinical facilities.

DOCTOR CLINE: I refused to recognize one of the members of the audience a moment ago.

UNIDENTIFIED: "Is it harder for a woman to get into medical school than for a man?"

DOCTOR CLINE: I will ask the panelists if they will answer the question.

DOCTOR LIPPARD: Any of us could answer that pretty readily because the statistics are readily available. The ratio of women applying for admission to medical school to those accepted is just about the same year after year as the ratio of men applying for admission and their acceptance. The fact remains, however, that very few girls apply for admission to medical schools, so the number admitted is small.

DOCTOR CLINE: Are you all in agreement?

DOCTOR BOWERS: I think it is interesting that a study carried on several years ago, I believe it was by John Stahlnecker, showed that approximately 85 per cent of the women who graduate from medical school continue at some time in an active productive medical career. Usually this is undertaken after a little active productive homelife.

DOCTOR CLINE: There is a question here, asking "whether there is really a trend toward the four-year medical school in the light of the suggestions of the College Association and the Council, for the establishment of more two-year medical schools." The second part of it concerns "the advisability of the establishment of a two-year school in addition to the establishment of a four-year school."

DOCTOR BOWERS: I was on the Council of the Association of American Medical Colleges when the resolution was adopted in concert with the Council on Medical Education and Hospitals of the American Medical Association. It was our feeling, and I must say that there was some disagreement on this among members of our Council and also in the Council on Medical Education, that because of the anticipated demand for medical school opportunities that we should express ourselves on the various possibilities that existed for increasing the production of physicians in the country; that the two-year medical school program could play a part. Therefore, we drew a resolution which said that the two-year medical school programs could make a contribution to increasing the supply of physicians in the United States. It was not implied as a preferential statement; in fact the year before, we adopted a far stronger statement calling for the activation of new medical schools and the expansion of existing schools, all full four-year programs, as rapidly as possible.

DOCTOR CLINE: Doctor Lippard, would you care to comment?

DOCTOR LIPPARD: We should pass over the assumption that existing schools are going to be able to expand to meet this anticipated demand. Existing schools have done a great deal to increase enrollment over the past few years. There are a very few that haven't about reached the saturation point. The last time a survey was made, the answer was that over the next 15 years existing schools could increase their enrollment somewhere in the range of 8 to 10 per cent. That's about as far as they can go and they are not going to be able to meet the demand for physicians. New schools are necessary.

DOCTOR CLINE: Would you agree that the bottleneck in increasing the enrollment of medical schools is mostly in the pre-clinical years rather than the clinical years?

DOCTOR BOWERS: Yes, I would.

DOCTOR CLINE: Therefore, a two-year school established now on the pattern of the University of South Dakota could provide a backlog of students to enter the more elastic, clinical years, subsequently. Would you agree with that?

DOCTOR BOWERS: I would agree with it. I would like to make one comment. I have a great regard for South Dakota, but if I were going to start a two-year program, I would take a look and see if there were not some new innovations, some new developments needed in the two-year programs. I know that in the four-year program we are far from having all of the answers concerning how to prepare men for the practice of medicine. I dare say that this is true of the two-year programs as well. I think that some logical experimentation in the two-year program is one thing that might make a two-year program an interesting development at Arizona, and I personally have been much interested in the changing program that has been developing at Dartmouth in their two-year school.

DOCTOR CLINE: This morning, Doctor Lippard, you commented on the cost of establishment and operation of a two-year program as against the four-year program. There are questions asking for you to repeat your previous statements concerning these.

DOCTOR LIPPARD: Sorry I didn't bring my notes with me but as I recall, it adds up to something like this: In terms of construction, assuming that you plan a four-year school and build only that part of it which is essential to a get the two-year program under way, the capital investment would not be less than $6,000,000. In terms of operating expenses, the minimal, adequate budget for a two-year school would not be less than about $500,000, as compared with somewhere close to $1,500,000 for a four-year school. Some of my colleagues may debate these figures.

DOCTOR CLINE: Doctor Hard, what are the figures for a two-year school today?

DOCTOR HARD: This morning, well I simply gave what our budget would be for this coming year, the facts are we are operating on it or will operate on it. This isn't to say that I wouldn't like to have more, but it's all I received. There are two or three positions in our institution which I think we should have which we don't have which could add $40,000 or $50,000 a year to our salary budget. I don't think Doctor Lippard's statement is anywhere as near out of line. The fact that we're operating on something less doesn't necessarily mean that it is still adequate. In this very context, I want to come back to a statement by Doctor Bowers. I would consider it most unfortunate in this regard "financial-wise" as well as "educational-wise" if any state should necessarily model its program, shall we say, either on a two-year program as for example ours or any of the other schools, and one might go a little bit further and say the same for a four-year school. I think one very essential point we keep missing is that we are talking about a future; and to model any program on the present structure when we have available for us for analysis so much of what the future portends, would be a mistake. Doctor Turner's experiment here is trying to solve one facet at least of this riddle, of a long program in a new environment where you don't have to be bogged down with all the ritual that we have to carry along with us, personality wise and otherwise. I couldn't too strongly emphasize Doctor Bowers' comment that before anything is done, the objectives should be established, and there is plenty of evidence available today that some real experimentation in education is necessary.

DOCTOR CLINE: There is a question not directed to anyone in particular, but it asks if the $20,000,000 figure for the development of a four-year school, is not high.

DOCTOR LIPPARD: I think, Doctor Cline, I mentioned this figure of $20,000,000 and as I

said this morning that's approximately correct, based on the experience in development of two new four-year schools within the past two or three years at the Universities of Florida and Kentucky. They are in the process of expanding the medical school at the University of West Virginia from two to four years and building an entirely new plant, which is going to run much higher than that. The figure of around $20,000,000 is not exaggerated.

DOCTOR CLINE: Doctor Bowers, you mentioned something that you characterized as rather exciting in the plans at Dartmouth in its two-year school. It's requested that you comment thereon.

DOCTOR BOWERS: Well, Dartmouth has endeavored to carry on a significant degree of integration in its various programs, and perhaps Doctor Turner could comment at greater length on this, has also endeavored to reach back into the preparatory phase, that is to say the undergraduate, the liberal arts area, and to tie this in with the program in the medical school.

DOCTOR TURNER: I do not have the details of this before me at the moment. But I would like to emphasize the same point that Doctor Bowers made, that there is great opportunity for experimentation in this area. The curriculum need not be frozen in the pattern of the past. We want to hold fast to that which is good, but we should be aware that there are many opportunities for improvement, particularly in the light of better high school education coming into the picture. This long educational preparation for medical practice is frightening away able students. We can begin to reverse this trend without seriously affecting the quality of medical education.

DOCTOR CLINE: There is an additional question here. "Is a four-year degree in the humanities or liberal arts ideal for medical preparation rather than the usual pre-medical scientific background of the under-graduate." I can't read it exactly, but I think it expresses a desire to contrast a degree in the humanities or liberal arts as against a more heavily loaded scientific pre-medical program.

DOCTOR LIPPARD: I think any of us could take a crack at this one. My own feeling is that there is no place in the college curriculum for a fixed pre-medical course. The student should be encouraged to major in that field of knowledge about which he is excited. Concurrently, he must complete the courses which are essential as tools for the study of medicine, namely, general and organic chemistry, physics, and biology. Now this does not mean that a student planning to study medicine should not major in biology, for example, but it does mean he should get beyond the elementary level in some field of knowledge and not spend four years in college dabbling at elementary courses in many different fields. It is certainly reasonable to expect that many students planning to enter medicine will be the kind of fellows who have a strong interest in biology or chemistry. I would be the last one to discourage such a student from majoring in those fields. I would prefer to see him getting into courses at an advanced level in some field of knowledge, including one of the sciences, rather than take the kind of pre-medical course in which he dabbles with this and that and sometimes attempts to anticipate, at the college level, courses which can be taught more effectively in medical school. I cite, for example, the superficial courses in anatomy and physiology that are often offered in liberal arts colleges.

DOCTOR BOWERS: Well I couldn't agree with Doctor Lippard more, but I think it is an over simplification to compare a humanities major with a pre-medical major. I don't think either one perhaps could adequately prepare the student for medicine. The student will be inordinately handicapped if he doesn't come to us with a good background in chemistry and mathematics. But so much of the biology, as Doctor Gustavson pointed out, descriptive biology, doesn't matter in molecular biology. The student better be taking physics or history or chemistry than some of the things that go under the name of biology. I might say that although Medical Schools Admission Committees and Deans talk a great deal about the desirability of the applicant diversifying his preparation, the vast majority of young men and young women coming to medical school feel that the surest way to get into medical school is to have a very deep preparation in physics, chemistry, biology and mathematics. So that no matter how much we talk about the fact that we like them to diversify, they still really don't believe it. They think that when we get our applications down and select our classes, the sociology, anthropology, economics, all go out the window and

all we look at are physics, chemistry, and biology.

DOCTOR CLINE: There is a question here. "What is the value of a two-year school if there is no certainty that the student can transfer to a medical school?" I think that question has been reasonably well answered. Insofar as I know with rare exception that probably is justified scholastically, there has been no particular difficulty in the students of the three still existing two-year schools, namely, North and South Dakota and Dartmouth, gaining admission to advanced status in other medical schools. Do members of the panel disagree with that?

There is a question here that requests the discussion of a statement attributed to Stanley Olson, Dean of Baylor Medical College, who recently outlined what's called a "3-3 plan." Three-year discipline in medical, 11 months per year; 3 years in hospital training in medicine, for both general practice and the specialties. Will the panel please discuss.

DOCTOR BOWERS: I have never heard of it. Maybe Doctor Royce has, he's from Baylor.

DOCTOR ROYCE: I've never heard of it either.

DOCTOR CLINE: A question to Doctor Hard. "Do your students ever take National Board exams?"

DOCTOR HARD: There have been some years when we actually required our students to take National Board. This is no longer in effect. About one-third of our sophomores will voluntarily take Part I of the National Board. This year we are making available four of the six National Board examinations to our freshman class. This is a voluntary thing for which the school is putting up the money, and these students are not candidates for the National Board. They will be taking the same examination as the candidates however.

DOCTOR CLINE: Here is another question commenting that from the inflationary spiral in which we are involved, the time required for the planning and development of a medical school, "Would not the cost be higher in the event of delay?"

DOCTOR LIPPARD: That's not a question for a medical school dean, but an economist. The figures that I have heard about building costs indicate that in our part of the country, they're going up about five per cent a year. If that's true elsewhere, obviously it's going to cost more to build a school ten years from now than it is now.

DOCTOR BOWERS: I might simply add this, that I know that Wisconsin, Michigan, Minnesota and Illinois are all very seriously evaluating their tax structure and total economy in anticipation of the continuation of the inflationary spiral and with deep concern about maintaining excellent instutions for medical education. Therefore, I do not believe that an inflationary spiral is necessarily a point against a medical school, but I'm certain that if Arizona intends to do a job on establishing a four-year medical school, some changes in your tax structure and economy may very well be justified.

DOCTOR CLINE: There is a question here which is often raised. It asks if any of the panelists have had experience with the disparity in salaries of medical school faculty compared to the salaries of the faculty in other schools in the same university. Doctor Turner.

DOCTOR TURNER: There are disparities. Some of these disparities I think are justifiable ones; others are not. But I would point out that inevitably when any one segment of a university has higher salaries for whatever reason, it inevitably helps all other salaries. So that I think this is not something to be afraid of because this has happened at Johns Hopkins. We have had to raise medical school salaries to meet competition, and a natural result has been an increase in other faculty salaries. Now I don't know whether this is good for the university but it's certainly good for the faculty. And I am rather a fatalist in this area anyway; I think it's merely a question of how rapidly these adjustments come about. They have to come about inevitably, and so at one moment one university has a slight advantage, but in the long run, I don't think this determines one man's decision to stay at a university or to come to one. He is more far sighted than that, because all good universities have to keep up with the procession.

DOCTOR CLINE: Any further comments by members of the panel? I think this applies more particularly in the clinical field. The earning capacity of most of the pre-clinical faculty, except for perhaps the people of the department of pathology, probably is not so much different than it is in the liberal arts college. However, when one goes into the clinical field, the capacity

of the gifted physician to earn much larger sums of money outside of the medical school is something that the medical school has to take into consideration. It, therefore, has to see that he's either well paid or that he is permitted to augment his income to a comparable point. Otherwise, they simply can't retain the type of people that they would like to see in a medical school.

DOCTOR GUSTAFSON: I suppose I've had as much to do with this particular problem as anybody here. I think that basically you are just dealing with the economics of the market place. If any of you have ever tried to hire a nuclear physicist in these days and compete with General Electric or Westinghouse, you find that your salaries in physics are considerably higher than they are elsewhere. A very interesting thing that I ran across a few years ago was this. The Ford Foundation asked me to look into the problems as to whether the Ford Foundation should set up a unit dealing with science and engineering. In going over the country and talking to people about the opportunities and so forth, I found to my great surprise, that the real drought today for positions that exist are in Greek and Latin. These people are not being produced. I could name at least three outstanding institutions that would pay almost anything for a good Latin and Greek scholar. I think that what we are dealing with is economics in the market place, and there's no way to beat it.

DOCTOR CLINE: I would like to ask the members of the panel if they don't feel that the same economic influences are partially responsible for the falling off in the number of applicants for places in medical school. A boy at the end of a four-year engineering education or a somewhat longer education in chemistry or physics can go out into industry and can command a very substantial salary at the time. Is this not to some degree a cause for the originally oriented pre-medical student to deviate from his planned course and go into some other field of activity?

DOCTOR LIPPARD: I think that is a factor. But there's another factor that we don't take into consideration often enough. That is that if a man wants to go into graduate study in physics or chemistry today, he is almost guaranteed a fellowship paying from $1,800 to $3,000 per year. All too frequently students now going into graduate study leading to the Ph.D are shopping around from university to university to find the one that will put up the most money rather than to find the man with whom they can study most profitably. Now, contrast that with medicine. When a man enters medical school, the best he can hope for is a full scholarship enough to cover his tuition with no contribution toward his board and room and other expenses. Furthermore, he can look forward to a period of four years or more after he finishes medical school during which he will be earning little or nothing, and all this at a time when 50 per cent or better of our students are married by the time of graduation. There are many economic factors involved in the lack of attraction for the study of medicine and the problem is broader than the immediate availability of a salary.

DOCTOR BOWERS: I'd like to point out another aspect of the problem. And that is the Sputnik, Polaris and Explorer have made a much greater impact on the youth of our country than Salk vaccine, penicillin or cortisone. The high school age youngsters are at that level making their decision to go into physics, chemistry, outer space or celestial mechanics at a time in many instances where they had not yet come to grips with the economic problems; but that at an even lower level we are up against an exceedingly serious problem, because the best young boys and young girls at the high school level are at the point of making the decision not to go into medicine but to go into these other more glamorous fields. So I think that there's another factor in it.

DOCTOR GUSTAFSON: I know what has been said that is a general opinion, but it doesn't check with the Purdue study. The Purdue study of some 15,000 high school youngsters indicated that medicine and teaching were very high on the choice level of the high school students and amazingly enough atomic energy was pretty low.

DOCTOR CLINE: Are there other comments?

DOCTOR LIPPARD: I wish I could quote figures which I don't have at hand but heard a few days ago and which are rather disturbing. They indicate that the medical students of the country at the present time are being drawn from a comparatively small economic segment of our population. The income of the families of the large majority of students entering medical

school today is $10,000 or more as contrasted to the national average family income of less than half that amount. I'm not sure that young men of all economic groups have an equal opportunity to enter the study of medicine today, although we all know of examples of young men who wanted to do it badly enough and found a way.

DOCTOR CLINE: There is a question here. "With the changes in modernization in the four-year schools, will it be more difficult for a student to transfer to a four-year school from a two-year school." It points up Stanford's new program as outlined by the Dean on a recent visit to Arizona that there would be no vacancies for students after two years, in their scheme.

DOCTOR HARD: Perhaps some of the other panelists have some comments to make on this, for they see this problem at the other end of the line. For my personal experience at South Dakota this will be only the second school that, owing to the type of program they have embarked upon, would prevent accepting one of our students. Western Reserve University, some four or five years ago inaugurated a, shall I say, rather sweeping experiment in medical education. Up to that time Western Reserve had consistently taken numbers of our students but had to advise us that, owing to the radical departure from the more stereotyped program we had, they did not feel they could continue to accept transfers. It is readily apparent that if every medical school goes in for a program of this type, we will have a problem to contend with, and it would undoubtedly mean changing our curriculum accordingly.

DOCTOR CLINE: Do those members of the panel who have intimate knowledge of the plans of the medical schools over the country feel that there may be a considerable number of the schools currently giving indication that they are considering the pattern outlined by the Western Reserve or Stanford Universities?

DOCTOR LIPPARD: I don't know that any of us could answer this directly. But it is true that after some five years of the Western Reserve experiment, no other school has decided to adopt it in its entirety. Perhaps in time some will.

DOCTOR TURNER: I feel that whatever disadvantage there is will be a temporary one. I think that as these patterns evolve the two-year schools will evolve, too, and I don't see any fundamental obstacle in this respect.

DOCTOR CLINE: "Does a medical school have much influence in raising the level of medical practice in the smaller towns of the state? If so, how?"

DOCTOR BOWERS: I think a medical school has a very definite impact on raising the level of practice in a state. There are several ways obviously by which this is done. One is that an active four-year program in a State will produce more physicians, and I have a feeling that if you have an adequate supply of physicians, they can practice more efficient and effective medicine than if you are in short supply and the doctor is called on to care for far more patients than he might be able to do and apply his best available skills and intellectual resources. There are other things a school can do directly for a community. One, of course, is to operate active programs in post-graduate medical education. There are a number of medical schools both private and tax supported, which are quite active in this field. I personally think that one has to keep this in balance, that you can get to a point where your faculty is so busy rushing around the State giving post-graduate courses that they forget to do teaching back in the home yard. But I do believe that a well-conceived, carefully developed plan of post-graduate medical education at the medical center and in strategically selected communities around the state can raise the level of medical practice. There's one other thing that is more personalized, and that is that I have a feeling that a preceptor program, which we operate at Wisconsin in which our students spend three months of their senior year working with a physician or a group of physicians around our state, has definitely contributed to raising the level of medical care in the communities in which these perceptor centers are established.

DOCTOR CLINE: Are there other comments? I think that Doctor Bowers' statement would be agreed to by the deans of all of the schools who have such preceptor programs. I know that it is true certainly in Kansas, and it is true in certain other states. They feel that it has had a great impact upon the level of medical care across the state.

Now we go into the matter of personal economics. Will you comment on what happens to the interns and practicing physicians in cities

where a medical school is established? One, if the physicians teach; two, if the physicians do not teach. Would you take that, Doctor Johnson, for a start?

DOCTOR JOHNSON: I don't know the results of any surveys on this particular point. I think that there's no question about it, that if one makes an active contribution to the school, this represents certain hours that he will not be available for his own private gain. This is a sacrifice that he makes in return for what he feels he obtains from the school. I think that it's a myth that a doctor's participation at a medical school will increase his financial gain in the community. I do not think that one obtains an appreciable number of patients by virtue of going to the school and teaching. No one really knows that you do this. When I am on service at the Denver General Hospital, a county hospital, and they refer me a few private patients, the collection rate on that group is so low that often I don't even bother to get their addresses. This just comes under the philosophy of taking the bitter with the sweet, and it is something that you do and are glad to do if you are interested in the welfare of medical practice and patients.

The people who go to the private physician are for the most part not interested in going to an institution for their medical care. Under normal circumstances the two groups do not compete for given patients. This is just the nature of human behavior.

I think one of the difficult things from the economic standpoint is the animosity that results from undue publicity. Private practitioners do not feel any differently about the medical school here than we do about some of our colleagues, who manage to get into the newspaper and appear to be the only doctors in the world that know modern medicine. This is unethical, and it exerts an undue influence and was written off in our code of ethics a long time ago on the basis that the best advertiser isn't necessarily the best doctor. A great deal of animosity develops on this particular count.

From a practical standpoint one only has so many hours in the day that one can be gainfully employed. The professor at the school only has so many hours. The dilution factor is tremendous. At the medical school in a large city you may have ten or twenty doctors who are on the full time faculty of the school who wish to have and are actively engaged in some private practice. In the city and county of Denver, there are a thousand members in the County Society. If those ten or twenty men were busy all day, everyday, it really wouldn't amount to a great deal in affecting the overall income of the doctors in the area. I think the doctor who wishes to participate in the teaching program must realize that he will do so at a little bit of a sacrifice and he shouldn't be too sensitive.

On the other side of the coin, however, it's not uncommon for the man in the medical school to survey the local situation and pick out the oldest, best established and probably the best doctor in the area, find out what his gross income is and decide that is probably what his net should be as a professor. This is a very unrealistic viewpoint. Many of those men with a large gross income are truly outstanding men, or they have some highly talented assistants helping them bring in this gross income. The facts of life are that the overhead of the office will take from 30 to 50 per cent; and by the time he finishes dividing his money with everyone that has an interest in it, he will net considerably less. I really feel that basically there should not be much reason for animosity in the economics of the problem. I feel it is overemphasized by both sides.

DOCTOR LIPPARD: May I comment on a somewhat related question while this topic is on the table. We hear criticism from time to time that members of full-time faculties who are on salaries are taking the bread out of the mouths of their colleagues. When you really look at it, you find that what Doctor Johnson has just said is most certainly true, i.e., that this is quite impossible. At Yale, we are on a so-called full-time system. We pay our clinical faculty members salaries which are comparable with, but somewhat higher than, the salaries elsewhere in the university. Members of our faculty see a certain number of patients referred to them by practicing physicians but for both diagnosis and treatment. They determine the fee to be charged and turn a chit into a billing office, the bill is collected and the money in turn pays part of the faculty salaries in clinical departments. It can be most honestly said that every cent collected goes into the pocket of a licensed physician. In an average year, the total income from

our entire full-time faculty is equivalent of that of about twenty reasonably successful practicing physicians. In the state of Connecticut there are about 3,000 registered physicians. It is not too difficult to see that the existence of Yale medical school and the fact that its full-time faculty does see some private patients has little influence on the incomes of physicians practicing independently in the state.

DOCTOR JOHNSON: An actual example illustrates best how unfavorable feelings develop. In Denver one of the full-time teachers was underpaid, and through the mutual efforts of volunteer and full-time faculty members his salary was raised to over $20,000 a year. This gave him a little working capital so he made more use of the volunteer help to take care of the work at the hospital, and he then opened two private offices. This type of thing can lead to much misunderstanding. It is really the human element that endangers the relationship between doctors nearly every time.

Doctor Gustavson hit the keynote when he said, "You don't have to make the same mistakes over and over and over again." I think the important point in the issue under discussion here is the recognition of the opportunity that is presented in the starting of a medical school. Remember that the longest journey begins with a single step. Tackle the problem of establishing a new and better relation between private medicial education than has previously existed to the benefit of patients and doctors alike.

DOCTOR ROYCE: My experience in an institution along these lines is with a research institution in which there is a pay scale which goes from zero, as far as the ability to pay is concerned, to that of the patient who can pay the full rate. In this institution actually 87 per cent of the patients who are admitted are charity patients, the other thirteen per cent are full or part pay.

Physicians in general are strongly behind providing the best in medical education, whether it be in the undergraduate or postgraduate level. Those clinical professors who must be full-time may be accorded some contact with private practice. Whether it be by referral or consultation basis should be worked out in detail with the County Medical Society. If a medical organization has any justification for its existence, it should be in its right to determine how a medical teaching institution can participate in private practice. If proper justifications are presented there would be no question in my mind as to what would be decided. If some such understanding cannot be worked out, the chances of continuous conflict between the private practitioners and the medical school are almost inevitable. If left entirely to the authorities of the medical school to decide such a policy, the original justification for private practice by full-time professors may be subject to abuse. Extensions of medical services can be a mechanism to assume more and more financial obligations of the institution involved. It is true that full-time medical school professors can only do so much practice when compared to the quality done by private practicing physicians. It is the *quality* not quantity of clinical practice that is affected – especially in the surgical fields. In an area such as Arizona, where growth in population has been exceedingly rapid and the roots of the medical profession may not be too deeply established, a medical school designed to participate in medical practice from its inception may very definitely cause an appreciable shift of practice away from private practitioners to full-time medical school professors – many of these patients will be from the upper economical brackets. To avoid this situation it might be well to evaluate very closely the local teaching talent. It should be adequate or almost adequate in the clinical fields. Use full-time professors primarily in the administrative field and where gaps might exist in certain areas among your local physicians. The bulk of the clinical teaching could be very well handled by local men. This would greatly diminish the financial obligation toward maintaining a medical school without compromising the quality of medical teaching. If the private practicing physicians accept those teaching responsibilities which they may be called upon to perform, there should be very little controversy associated with the establishment of a medical school. These are matters which the local physicians should weigh carefully before arriving at a decision.

DOCTOR TURNER: It is timely to bring these points out on the table as Doctor Royce did in his original talk. We have the same system at Johns Hopkins that Doctor Lippard described. Therefore, I would advise very careful-looking into these patterns before one is set. I

agree with Doctor Royce when he recommends that this be done. Now let's get back to fundamentals a moment. Why are full-time clinical professors allowed to charge a professional fee? The reason is that the full-time man needs both types of clinical material, private and ward patients, in order to practice good medicine and to be good teachers. There will not be enough so-called "free patients" in the future to supply the need for the full-time faculty. However, when the income from the private practice of the full-time people goes into a pool, which helps to support this full-time faculty, this immediately imposes a limitation on their desires to earn a great deal of money for the medical school because it does not increase their annual take-home pay at all. This, in my opinion, is a healthy thing. This is a desirable pattern from another standpoint, for the medical school in effect says, "your main job is to teach and to do research, and we do not want you to spend a great deal of time in clinical practice." This pattern, however, is followed by only a few medical schools, for the prevailing system is one of so-called "geographical full-time." I take a dim view of this latter pattern, because I think it offers greater incentive for the so-called "full-time faculty" to spend an unwarranted time in medical practice. And so again, it does behoove those interested in the starting of a medical school to think these things through carefully before establishing a final pattern.

DOCTOR CLINE: Having lived all of my life in a community in which the geographic full-time has existed in two institutions, and having always been on the clinical or volunteer faculty, I have heard unjustified criticisms directed at certain of the geographic full-time men. Other criticisms were justified. There have been instances in which some of the members of the faculty of one or the other of these schools have imposed upon the situation to the development of very large incomes for themselves and to the detriment of the teaching program. In one of these institutions a resident recently told me that it was impossible for him to see the head of his department even though he had been on the staff for something over two years because the Professor was so engaged in private practice that his time was absorbed. I think one has to look at it this way: the geographic full-time man is not a full-time man. He is a part-time man who simply devotes a large part of his time to the teaching program. If the institution is capable to pay him an adequate salary, he should be permitted to augment his salary up to a certain point. There are various mechanisms which have been employed to limit the amount of private practice which such a man may do. There may be a financial limit or a limit on the number of beds that he may have. The important thing is, whether that man attends to his teaching duties with fidelity and devotes the requisite amount of time to the job for which he is employed. If he happens to earn a little money under proper circumstances, I don't feel that any of us should complain. If he does not fulfill his teaching responsibilities, this is a different matter. The example which Doctor Johnson gave is a beautiful one. That man ought not to be on the faculty of a medical school in any capacity because he is not a proper influence in the medical school.

DOCTOR JENKINS: In the course of learning and teaching in medical schools, I have been exposed to a variety of systems wherein private patients have been treated. As some of you may know, until a few years ago, a full-time man at the University of Colarado was not allowed to have much contact with private patients. I would urge you to avoid this system because it simply does not work well in obtaining the kind of teaching clinical faculty which you will desire. The best full-time clinical teachers are people who have some responsibility in the personal care of private patients. People who are going to teach an active house staff and medical students how to take care of private patients should take care of such patients themselves.

The whole plan of the private practice privileges of the full-time staff should be very carefully considered and spelled out in advance, however. At the University of Colorado we are making some progress toward a harmonious arrangement. I think it is most important that you limit the time which full-time teaching people can spend in private practice activity. The human being, being what he is, finds that as the income grows, the temptation to devote more time to private practice also grows. Doctor Cline has pointed out that over and over again it has been shown that, when the time is unlimited that the full-time teacher can spend in the care

of private patients, he soon is likely to see very little of the medical students and very little sometimes of his own personal staff. Limitation of this time is very important.

It is my own personal feeling that full-time teachers in an institution should see only patients who are referred to them by practicing physicians. Furthermore, the practice should be limited by the time factor and the gross income factor as a double check to insure that his primary interest remains teaching. If he does a good job in the institution where he is teaching and if he is really worth his salt as a full-time clinical teacher, he will not lack for an adequate number of referred patients. Finally, I should urge you to look very, very strongly at the system advocated by Doctor Lippard and others whereby the geographic full-time is eliminated. I think this has been a hazard in most of the institutions where it's been accepted. Our plans, which are being faciliated at the University of Colorado right now, are strictly toward the type of system which was just described. That is, there will be no such thing as part-time, full-time people. All full-time people will be full-time people. Otherwise they will be in private practice. The income that they derive from any patient they see, irrespective of what hospital they see those patients in, whether it's the teaching hospital or whether they are performing a requested consultation in a private hospital, reverts to the institution, and these fees are aimed at faculty salaries. It is by this means you understand that the Professor of Anatomy has his salary raised as well as the Professor of Surgery. One of the best ways to have a happy institution is by having salaries throughout all levels of the faculty comparable. The way to have an unhappy institution is by having the clinical professor automatically earn seven to eight times the income of the pre-clinical professor. When you come right down to it, how well the system works in terms of full-time clinical teachers participating in practice, preferably a referred practice, really depends upon the veracity and the honorable character of the people involved; and those who are really participating in full-time teaching because what they want to do is teach and do research, will not really abuse this privilege.

DOCTOR BOWERS: May I make one comment. I think there's a great deal of misunderstanding about what we call full-time, what we call geographical full-time and what we call part-time. Now I could cite institutions where the so-called "geographical" full-time arrangement works quite well indeed and will continue to work so. My point would be that what's good for Yale might not necessarily be good for Colorado. What's good for Wisconsin is not necessarly good for Arizona. Again it comes back to this point: when you start a four-year medical school, and I certainly hope that you will, the kind of control that you develop on your clinical faculty should be developed in line with the problems of Arizona and not necessarly what works in some other institutions.

DOCTOR BOYCE: Two years ago our Liaison Committee between the medical school and the medical society began working on a project to determine just how to solve this problem. In the course of the investigation, questionnaires were sent to all the medical societies in which medical schools were located in their areas, and also they were sent to the deans of the medical schools. There was quite a variance in the different types of patterns that were functioning in different areas, and actually the whole context boiled down to the fact that it was a local problem to be worked out on a local level. Unfortunately, after we had assembled all these data, we were unable to get any action. There are discrepancies in the duties of a full-time professor. For example: If a full-time man carried approximately 80 private patients in the hospital, some of the people couldn't figure out how one could teach and do that much private practice. Medical students complained that some full-time professors rarely had any teaching contacts with them. I'm sure there are a lot of ways to work out this problem satisfactorily for all concerned if a sincere effort is made by the parties involved.

DOCTOR CLINE: That brings us then to a discussion of "Some of the Mechanisms of Trying to Work Out These Problems in Advance." What can be done to maintain good relationships between the faculty and the non-faculty medical men? With a tax-supported medical school, what part should the medical society have in its organization? Doctor Johnson.

DOCTOR JOHNSON: It seems to me that medical education in a community has to be completely integrated. I can tell the deans where

their indigent patients are going partly. In Denver we have teaching programs at three of the private hospitals. In order to maintain the required standards, we must get every indigent patient that we can. Our house staff must do some surgery in order to get their certification from the board. So we're dabbling in indigent patient care in an institution which isn't set up to do it.

The medical school, on the other hand, is busy trying to get the private patient. The doctors seeking internships and residencies cannot decide which place they want to go. We even have them transferring from one program to the other. Believe it or not, some of them drop out of the program at the school to come to the program at the private hospital, and this is all wrong. We've got to work together on this whole problem.

When it comes to the question of the establishment of a medical school, it is of great interest to private medicine because it is our profession, because we are all taxpayers, and because we hope that we are all community and public minded people and that we take an interest in what happens in our area. In listening to these discussions today and having a chance to talk to men who look on the world from a little different window than I do, I have learned a great deal and I do not see any problem which can not be solved. I think that the doctors want to see that the school in their area is the best that it can be. Some of them will participate by teaching and, of course, the deans have a big problem: every doctor isn't a teacher. They must make the choices and pick the men who will really fit into their faculty. Some of the doctors in the area will receive from the institution. They won't be on the faculty, but they will be progressive individuals who will use the opportunity to learn. The doctors in the outlying communities will benefit by the programs of circulating teams of teachers who are sent out to teach short courses.

The schools on the other hand face a tremendous problem in finances. The ideal situation would be that wherein the dean faces the Legislature for the budget with the president of the state medical society right there beside him, saying this budget represents something that is necessary for the whole state, not just for a small group of men called at the school. We should be willing to give of our time and efforts to give them whatever free talents they can use and want. It seems to me that unless we do this, somebody else is going to interfere and tell all of us what to do.

DOCTOR CLINE: Doctor Royce, you care to comment?

DOCTOR ROYCE: I would say that this problem of getting money from a Legislator is a real job. It has been the policy of our County Medical Society as well as that of our State Medical Society to do whatever we could to influence the Legislature to grant the necessary funds to have a good sound medical school program. Recently, the head of one of our tax-supported medical schools went to the Legislature with the idea that he wanted to raise the salaries of all full-time physicians who were teaching clinical medicine and also the ones in basic sciences, to give them an adequate salary without having to do private practice. This would be an ideal solution to an extremely perplexing problem associated with medical education.

DOCTOR CLINE: Are there any comments from the deans? If they do not choose to comment I could say that an official of the California State Medical Association and I have gone to Sacramento, accompanied by Doctor Chandler, who was then the Dean at Stanford, to testify on behalf of the University of California Medical School, to assist it to obtain the appropriation it needed. After a program gets going that is, in general, the sort of co-operation which one can expect from the medical organizations and other medical schools within the state.

Now here is a loaded question, which I shall answer and shall not ask any member of the panel to answer. Perhaps due to the certain experiences I have had I may be in a better position to answer it. I shall not read the question as it is phrased, but I shall give the answers I believe the questioner wishes to have. The question asks for a comparison of training of osteopaths and doctors of medicine. Having spent some time studying osteopathic problems and having inspected five of the six schools, I think very briefly I may say this: on paper the admission requirements are identical to those of medical schools.

The inspectors pulled at least a hundred records of accepted and rejected students in the

schools of osteopathy. There was no student admitted to a school of osteopathy who was not technically qualified for admissin to a school of medicine. The institutions where the osteopathic students obtained their pre-professional education are less renowned on the average than is true of applicants to medical schools. I say it in this way because I do not know that this necessarily infers an inferior degree of education, because some of the schools we know nothing about.

The average grades were lower by a small degree than those of students admitted to schools of medicine. The basic sciences are reasonably well handled in osteopathic schools. Some of them are extremely well handled in certain places. There is no anxiety as to the quality of the basic science education. Except in the field of pathology they are able to get Ph.D. teachers and some of them are excellent. Most of the heads of departments have taught in medical schools in some capacity heretofore. There are a few doctors of medicine who have reached retirement age and who are teaching in osteopathic schools the subjects which they previously taught in medical school.

The field of pathology is something else. There the competency of the average teacher was essentially below that of the other preclinical sciences. This is understandable, because the osteopathic schools cannot afford to pay the few osteopathic pathologists who get their heads above the crowd anything like the salaries that the private osteopathic hospitals will pay them. I inquired into what one of these pathologists made in a private hospital, and it was rather an extraordinary amount.

When it comes to the clinical years one finds a great deal more spotty educational program. There are places in which one would encounter clinics, lectures, and demonstrations which would be a credit to a medical school. There are other instances in which one would encounter presentations which would be an insult to a medical student. The average osteopath has suffered from a lack of opportunity to get a first-rate medical education. This is not uniform. I sat in the out-patient department of one of the osteopathic schools with the dean of one of our medical schols when the students were bringing up their patients to him for discussion. When we had the opportunity to be alone he said, "I wish I could get that average quality of instruction in our out-patient department." Encountering the sharp young teacher the next morning in the hallway I asked him, "Where did you get your medical training?" He said, "Wouldn't you like to upgrade their medical education?" They have the full curriculum of medicine. There is no deviation from that at all. It's just the same thing. In each school we pulled 100 charts on the hospital wards and 100 charts in the record room.

It is required that their hospitals have an entro-posterior and a lateral silhouette of the spine. The degree to which these are used varies. In one instance 200 charts showed no notation in the charts. Some research goes on in their schools but it is not extensive.

To give an overall broad picture is difficult. The components of their education are identical with ours. They can't match the quality of our medical schools as of the present time, but some of their schools are not too far distant from some of our medical schools. In the course of time I think there will be a change of attitude on the part of the medical profession, making it possible for the level of instruction to be improved and that very shortly some will become medical schools. I hope that answers the question. I refrained from reading the question because of certain implications in it. This is your meeting. If there are unanswered questions, I will be delighted to have them. Doctor Gustavson.

DOCTOR GUSTAVSON: There was one element brought out by Doctor Lippard or Doctor Turner, and it had to with the charging to the cost of medical education the cost of operating the medical school hospital. In setting up a medical school I think this is terribly important. At Nebraska, for example, there is written into legislation the requirement that for any patient who is referred by a county to the medical school for treatment, the county contributes — I think it's $4 a day. When the costs of treatment in the medical school are between $20 and $30 a day, it is charged to the medical school budget. This makes the medical schools costs look large and way out of proportion to what the medical education costs really are. So I would say that anybody contemplating a medical school should give thought to this problem. They should be most careful to see that these hospital costs are taken care of in the beekkeeping and *not* charged to the operation of the medical school.

DOCTOR CLINE: Are there further ques-

tions to the panel? If not, would any members of the panel care to comment further?

DOCTOR BOWERS: I think there is one. We're trying to think about the problems and questions that must be running through the minds of our audience in regard to location of medical schools. I'll stick my neck out and say that there is no pre-formula which one can use in deciding where to establish a medical school. There are many, many factors that enter into it in regard to the availability of a supply of teaching material. There are good medical schools which operate in communities of 20,000 and have a quite adequate supply of teaching material, and as you know the number soars up from there. I think I should say something about this, John, because I know that it is a question that must be very much in mind.

DOCTOR CLINE: Are there other comments from the panel? If not, than I shall try to sum up. It may be an individual summary with which everyone may not agre, but as nearly as I can I shall interpret the papers and the remarks which we have heard today. First of all, I started the meeting by stating that it was the purpose of this panel not to try to advise the doctors of Arizona whether they should have a medical school, what type of school or where it should be located. I think, however, pertinent points have been brought out as a result of the discussion here.

That Arizona faces a decision as of sometime in the future, with the progressive growth of the western population and the limitation of the opportunities for Arizona students to study medicine under the WICHE program is apparent.

There is no doubt in the minds of any of the members of the panel, at least as far as I could ascertain, but that a medical school increases the level of practice and the general tenor of medicine in any state in which it exists.

Arizona must decide whether it wishes to have a medical school and if so, what type and where that school should be located. I think the panel is agreed that a survey by an outside agency seeking the solution to some of those problems would be an advisable thing . . . that there should be no precipitate action in the establishment of a medical school anywhere. A medical school should be established only with adequate planning, whether it be a two-year school or a four-year school.

And that certain essentials, particularly for the four-year school but to some degree for the two-year school are as follows: (a) there must be adequate initial financing and assured future financing of the medical school, (b) it should have an association with a recognized educational institution of university stature, (c) there should be an adequate reservoir of patients, (That, of course, would influence your thinking to some degree as to location), and (4) there should be an adequate reservoir of qualified students.

That a two-year school is not ideal in the minds of medical educators, but that it is a satisfactory mechanism that can be employed, particularly if a four-year school is not possible. If a two-year school be established, there should be active planning from the outset for expansion into a four-year school to be implemented when it appears to be desirable and feasible. Recent trends usually continue for certain periods of time and point the way reasonably well for planning in the near future.

In the event that you decide to establish a medical school of either type, the school should be established with the active co-operation of the medical profession in the community. Medical leaders should be invited in on the original plans and the relationship between the medical school and the medical profession should be worked out in advance to avoid the unfortunate circumstances which have arisen to the disadvantage of medical education and medicine in general in some parts of the country.

I would like the members of the panel, if they choose, to add or to dissent from what I have just said in summary.

DOCTOR TURNER: I think it is a very excellent summary, Mr. Chairman.

DOCTOR BOWERS: I think it is very much better than we did. Amen.

DOCTOR CLINE: I had the advantage, of course, of cribbing on your notes. So thank you all very much personally for the hospitality that you accorded me here. I wish to thank the members of the panel, whom I think have done a magnificent job for you in making an effort to answer the questions which you have in your mind.

Editorial

THE PHYSICIAN AND PUBLIC HEALTH

The modern public health era began in this country about a century ago. In addition to recording vital statistics, the primary function of early health departments was the control of epidemic disease through sanitation of cities. With the coming of the Age of Bacteriology, control of communicable disease was put on a more rational basis. Studies on bacteria soon led to the production of several effective methods of immunization and of treatment. Discovery of the role of insect vectors and of healthy human carriers in the spread of disease brought other useful measures for the control of epidemics. Health officers also soon saw the necessity for supervision of the processing and handling of food and milk supplies.

As epidemic disease began to decline, early in this century attention was turned to the control of such important endemic diseases as tuberculosis and syphilis. Also careless and inhumane methods employed by many of the rapidly expanding industrial plants led to the demand for the control of health hazards in factories. This added industrial hygiene as a new responsibility in public health. At about the same period, the high death rates of women in child birth and of infants during the first year of life forced health agencies to undertake campaigns for the improvement of maternal and child care. Indeed it began to be clear that "the nature and scope of public health practice cannot be static, but must change with the needs and desires of the people and with progress in science and technology."

The results of physical examination of draftees in World War I revealed a shocking prevalence of chronic disease and physical defects among the young men of the nation, much of

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.
7. Exclusive Publication — Articles are accepted for publication on condition that they are contributed solely to this Journal. Ordinarily contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unusued manuscripts.
8. Illustrfations — Ordinarily publications of 2 or 3 illustrations accompanying an article will be paid for by Arizona Medicine. Any number beyond this will have to be paid for by the author.
9. Reprints — Reprints must be paid for by the author at established standard rates.

(The opinions expressed in the original contributions do not necessarily express the opinion of the Editorial Board.)

which was undoubtedly preventable. Realization of this situation led to a great increase of public support to medical research and to medical education. Soon measures to prevent pellagra and rickets and to treat diabetes and pernicious anemia became available. Other powerful tools for use in the fight against disease quickly appeared. Some of these, such as penicillin and streptomycin are for use in the treatment of individuals, others such as fluoridation of water supplies are for community application.

Through experience with communicable disease, a new science was developed – epidemiology, the diagnostic discipline of public health. The principles learned from the study of diptheria and typhoid fever are proving extremely useful in defining such problems as rheumatic fever, coronary thrombosis and lung cancer. These techniques for field studies are now applied with fruitful results to the evaluation of vaccines and drugs and for the clarification of the causal factors in road accidents and air pollution of cities. It appears certain that new dangers will arise and new health hazards be found as by-products of our rapidly increasing industrialization and of our growing urbanization. Obviously, putting more people into less space will give greater opportunities for sharing infectious disease.

What is the position of the practicing physician in respect to public health? Clearly, he has a dual interest: 1) as a citizen anxious for a healthful environment for himself and family. 2) as a professional man whose activities are of the greatest importance in the maintenance and improvement of the health of his patients. Every physician is a practitioner of preventive, as well as curative medicine. This is especially true in obstetrics and pediatrics. Individual physicians have made important contributions to preventive medicine through studies on their patients. A recent example of this was the observation by Dr. N. M. Gregg, of Australia, of the frequent occurrence of congenital defects in babies born of women who had suffered attacks of German measles during the first months of pregnancy. This discovery changed rubella from an infection of negligible importance to a disease of considerable social significance.

Surely, there is a third position that the physician may be expected to assume toward the public health. Of all members of the community, he is the most knowledgeable in all matters relating to the health sciences. He knows the potentialities of and the necessity for a group approach to the study of many diseases. He knows that unsanitary urban areas and the presence of unhealthy groups in the population endanger the health of all. He knows that the occurrence of preventable disease in the community adds to the tax burden of all. He above all is best able to support and to defend public health agencies and to see that his own community is well protected. Is not this a responsibility he should gladly assume?

Public health has been defined as the science and art of 1) preventing disease, 2) prolonging life, and 3) promoting health and efficiency through organized community effort. In the pursuance of these objectives, public health agencies should provide only such services as the individual cannot afford to provide for himself, or such as can best be provided on a community basis.

Never before in the history of man has it been possible to do so much to promote and maintain the health of the people. In the past, food, clothing and housing were considered the basic necessities of life. Recently, medical science by its concern for protecting and enhancing life and by its increased competence in so doing, is making medical and health care something universally desired.

Physicians have a great role to play in the improvement of human health not only by serving their own patients conscientiously, but also by insisting that adequate services for preventive medicine and public health be provided for the communities in which they live.

A. S.

"THE PILL THAT COULD CHANGE AMERICA"*

The "Pill" in this title, refers to socialized medicine – hence, the "could" should be changed to "would," and it should be supplemented by "and for the worse." This play of words can not change the excellency of the 28 page booklet published by the American Medical Association.

"The Pill That Could Change America" is one of the best compilations ever submitted for

*May be ordered from: AMA, 510 N. Dearborn St., Chicago 10, Ill.

public consumption. It contains comprehensive facts, figures and opinions from all sections of the world which are well illustrated by charts and graphs. It is readable and persuasive yet retains an appeal which will attract readers.

There are two things which we as individuals can do to halt the on-rush of the socialization of medicine. The first thing would be, become well versed with this booklet and secondly, see to it that "The Pill That Could Change America," receives the distinction of having the largest circulation of any one publication during the next year.

KOHL — JARRETT

(Not An Obituary)

The Board of Directors of the Arizona Medical Association has directed that The Journal of The Arizona Medical Association extend its resolved commendation to Drs. Harold Kohl and Paul B. Jarrett for their respective achievements, which have brought honor to them and secondarily to our Medical Association.

Dr. Kohl thought that better use could be obtained from the monies spent by some people for often not needed, unappreciated or even undesired gifts to Doctors as alleged Christmas gifts (some people hate maple sprup). This thought was turned into an idea — the idea worked up into a workable proposal — and the proposal was accepted and initiated by the Arizona Medical Association.

His proposal, in brief, was that druggist, drug houses, medical and surgical supply companies, morticians, etc. be requested, if they desired, to give donations to the American Medical Education Foundation, in lieu of gifts to doctors. This proposal was officially adopted by the Arizona Pharmacy Association and so recommended to its members.

Dr. Kohl had been dedicated for many years to his belief that we doctors should do more to help our schools and future doctors to better serve our fellow man. Hence, it was natural that he would channel the dollars to this purpose.

The mutual response last December was more than encouraging, with one single donor (the maple syrup man) contributing $1,000.00.

The American Medical Association, through its American Medical Education Foundation, was quick to determine the merits of Dr. Kohl's plan; but since he was anonymous to them, they have called it, The Arizona Plan and have made a National appeal, with a brochure entitled, The Arizona Plan. Millions of the citizens will be benefactors, because of Dr. Kohl's ingenuity.

With his ears open, his personal experience and his alert deductive mind, Dr. Paul Jarrett was able to quickly concieve that a great peril existed. Having this conception, he was cognizant of its impact and sent out the alarm. His deductions were so accurate that the whole nation was quickly informed of his discovery that plastic bags may kill. Today's Health, recently gave Dr. Jarrett credit for this alert, to quote. "A Phoenix, Arizona physician, Dr. Paul B. Jarrett, was first to point out the hazards of such bags and sheeting present after four local children died while playing with them. The Warning (Dr. Jarrett's) appeared in The American Medical Association News of February 9, 1959." Dr. Jarrett's warning was carried by Time Magazine and the nation's press releases.

Through Paul's keen deductions, character and compulsion, many, many lives will be saved for happiness and future progress. Those who love life and the progress of humanity, will always revere his name.

WHICH PATH TO MEDICAL SECURITY?

It is now twenty years since the medical profession gave birth to prepaid medical care, but its ultimate patterns of operation and control are yet to be determined.

While most of us recognize that the public will make the eventual decision, nevertheless we doctors have it within our power — if we will — mightily to influence that decision. For the simple fact is that, in the long run, the people — our patients — will support that system of medical care prepayment which offers them the best assurance of satisfactory professional service through physicians and institutions of their own choosing.

Today, several contrasting programs of medical prepayment are competing for popular and professional favor — each embodying a distinct concept of the relationship between patient and doctor.

One such program is the limited cash reim-

bursement program of the insurance industry, which offers the insured certain dollar indemnities against certain medical contingencies, irrespective of the physician's charges for the service required.

Another major program is medicine's Blue Shield Plan, which seeks — through professionally negotiated schedules of payment and, in most areas, through the agreement of participating physicians — to assure the patient of fully paid professional services.

A third program is the "closed panel" of physicians. Operating frequently under labor or other lay auspices, this plan undertakes to provide a comprehensive service through a selected group of physicians remunerated by salary or per capita allowance, regardless of the volume of service required of them.

Which of these programs most faithfully reflects the traditional pattern of American medical practice? Which program is most clearly motivated — as medicine itself is motivated — to render service to the patient and to meet the needs of all segments of the community? Which program returns the fullest value to the patient and most fairly compensates the doctor? Which program best utilizes and protects the modes and ideals of practice that have earned American medicine the envy of other lands?

Which program will the American doctor favor — in the common interest of medicine and the people?

DMCT TERMED "VERY STABLE"

Thirteen papers were presented on demethylchlortetracycline (DMCT), a new form of tetracyline derived from a mutant strain of streptomyces. Studies were reported in which DMCT in 150-mg. doses was compared with other tetracycline." Biliary excretion of this new derivative produce more prolonged blood levels as a result of its increased stability and slower renal clearance. Garrod, of St. Bartholomew's Hospital, London, who was moderator of this session, referred to it as "the stabilized form of chlortetracycline." Biliary evcretion of this new derivative is not significantly different from that of older forms. It was stated that, in general, bacteria are at least as susceptible to DMCT as to other tetracyclines.

(from Seventh Annual Antibiotic Symposium, Nov. 4-6, 1959, Washington, D.C.)

RINGWORM PLAGUES 5,000,000 PEOPLE AT ANY ONE TIME

The kinds of ringworm cases that physicians are treating:

2,500,000 Cases of Tinea Barbae, Tinea Corporis, Tinea Cruris and other Tineas
400,000 Cases of Dermatophytosis (Dermatomycosis)
300,000 Cases of Tinea Capitis
30,000 Cases of Onychomycosis
(from New Medical Materia, Vol. 1, No. 10)

Women lead in cancer incidence — up to age 57, but chances of survival are better for women than men.

(from New Medical Materia, Vol. 1, No. 10)

SAFEGUARD FREEDOM BY VIGILANCE

If each of us would exercise vigilance to safeguard our liberty, rapidly growing collectivism could be stopped in its tracks — and eventually destroyed. Dr. Curtis W. Caine (Jackson, Mississippi), a Director of AAPS, recently demonstrated how true patriots should react and act to schemes that feed the cavern mouth of collectivism. Dr. Caine, who flies his own plane, received a communication from the Mississippi Aeronautics Commission urging support for a program for federal aid for airport construction. Dr. Caine replied as follows: "The cart is before the horse. Instead of us going to Washington, hat in hand, and begging federal funds (our own money which has been confiscated), we should build our own airports and roads, do our own house building and power producing, and let Uncle Sam come to us, hat in hand, and beg for funds to keep Washington going. At present, out of every dollar Mississippians have extracted from them by Washington in the form of taxes only fifty cents ever gets back to us in any grant, subsidy, or 'gift.' So, a dollar kept in Mississippi would do two times what it now does when it goes to Washington and is 'given' back to us. The brokerage fee is 50%. And Mississippi is second best off. Wyoming gets 52% back. But California gets only 9½%, Delaware 9.75%, etc. begging has got to cease somewhere. Let's make it Mississippi. Let's ask for *nothing*. Let's do it ourselves — at half the price."

(AAPS Bulletin No. 19-59)

NIAMID

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makes the cancer patient more comfortable

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- decreases narcotic requirements
- increases appetite
- improves mental outlook

NIAMID lessens the need for narcotics in the depressed cancer patient and appears to potentiate pain-relieving agents. As pain is reduced and mental outlook improves, apprehension and depression are replaced by a brighter and more alert attitude, and appetite returns. The family, too, is cheered by the improvement in the patient's condition. With NIAMID therapy, patient care becomes noticeably less demanding.

Supply: NIAMID (brand of nialamide) is available as 25 mg. (pink) and 100 mg. (orange) scored tablets.

Complete references and a Professional Information Booklet giving detailed information on NIAMID are available on request from the Medical Department, Pfizer Laboratories, Division, Chas. Pfizer & Co., Inc., Brooklyn 6, New York

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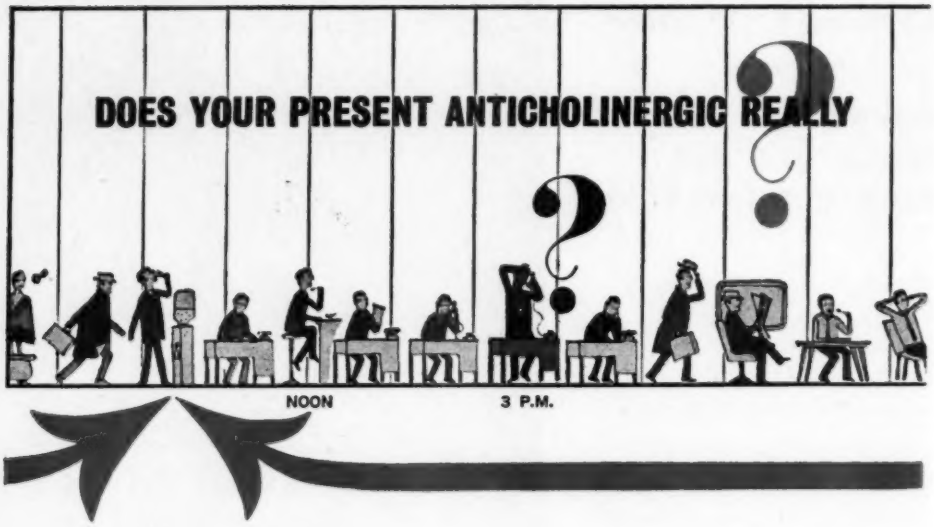

The test—you might say the acid test—of an anticholinergic is simple: will it protect your patient from hyperacidity around the clock, even while he sleeps. The weakness of t.i.d. or q.i.d. preparations is well recognized; but even some "b.i.d." encapsulations may be unreliable. McHardy, for instance, found a "widely variable duration of action, definitely less than that anticipated" in the "sustained," "delayed," and "gradual release" anticholinergics he studied.[1]

COMPARE THE DATA ON ENARAX... the new combination of an **inherently** long-acting anticholinergic (oxyphencyclimine) and Atarax, the non-secretory tranquilizer. Note the effectiveness of oxyphencyclimine:

OBSERVE THE OXYPHENCYCLIMINE REPORTS...

McHardy: "[Oxyphencyclimine] has proved to be an excellent sustained-action anticholinergic in our study of this agent over a period of eighteen months."[1]

Kemp: "...for the majority of patients, one tablet every 12 hours provided adequate control. This characteristic long action...may constitute an advantage of this drug as compared to coated 'long-acting' preparations of other compounds."[2]

Add Atarax to this 12-hour anticholinergic. The resulting combination—ENARAX—now gives relief from emotional stress, in addition to a reduction of spasm and acid. Atarax does not stimulate gastric secretion. No serious adverse clinical reaction has ever been documented with Atarax.

LOOK AT THE RESULTS WITH ENARAX[1,2]:

Does the medication you now prescribe assure you of all these benefits? If not, why not put your next patient with peptic ulcer or G.I. dysfunction on therapy that does.

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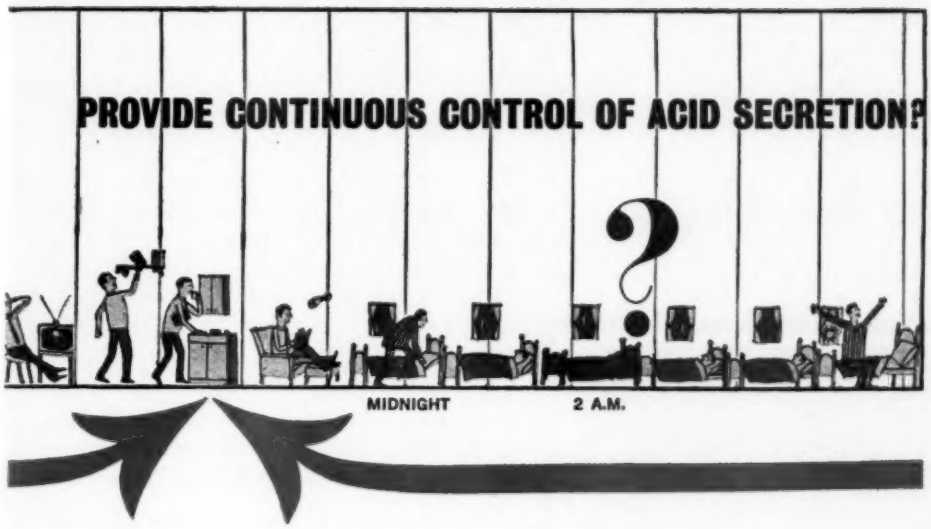
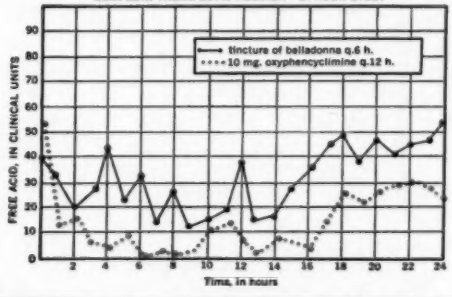
(oxyphencyclimine plus ATARAX®)

A SENTRY FOR THE G.I. TRACT



"Prolonged periods of achlorhydria" after 10 mg. oxyphencyclimine q. 12 h.[4]

MEAN GRAPH OF GASTRIC ACIDITY IN 4 PATIENTS RECEIVING COMPLETE THERAPEUTIC REGIMEN • 24-HOUR STUDY



Clinical Diagnosis: Peptic Ulcer—Gastritis—Gastroenteritis—Colitis—Functional Bowel Syndrome—Duodenitis—Hiatus Hernia (symptomatic)—Irritable Bowel Syndrome—Pylorospasm—Cardiospasm—Biliary Tract Dysfunctions—and Dysmenorrhea.

Clinical Results: Effective in over 92% of cases.

As for Safety: "Side reactions were uncommon, usually no more than dryness of the mouth...."[5,6]

Each ENARAX tablet contains:

Oxyphencyclimine HCl ..... 10 mg.
Hydroxyzine (ATARAX®) ..... 25 mg.

Dosage: One-half to one tablet twice daily—preferably in the morning and before retiring. The maintenance dose should be adjusted according to therapeutic response. Use with caution in patients with prostatic hypertrophy and with ophthalmological supervision only in glaucoma.

Supplied: In bottles of 60 black-and-white scored tablets.

References: 1. McHardy, G., et al.: J. Louisiana M. Soc. 111:290 (Aug.) 1959. 2. Steigmann, F.: Study conducted at Cook County Hospital, Chicago, Illinois, in press. 3. Kemp, J. A.: Antibiotic Med. & Clin. Therapy 6:534 (Sept.) 1959. 4. Leming, B. H., Jr.: Clin. Med. 6:423 (Mar.) 1959. 5. Data in Roerig Medical Department files.

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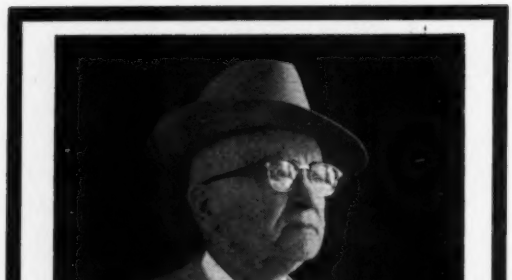
In Memoriam

FORREST L. REESE, M.D.

1885—1959



1885—1959

Dr. Forrest Leslie Reese, 74, long-time resident of Phoenix, died Thursday, October 1, 1959, in St. Joseph's Hospital.

Born in Paris, Illinois, Dr. Reese came to Phoenix in 1919 from Bicknell, Indiana, following his discharge from the medical corps of the army. He had served in World War I as a surgeon in France.

In Phoenix, Dr. Reese, an eye, ear, nose and throat specialist, was one of the first occupants of the Professional Building. He retired in December 1954.

Dr. Reese was a graduate of the College of Physicians and Surgeons, University of Illinois. He did his internship in the Cook County Hospital in Chicago, finishing in 1910 and practiced in Indiana until he entered army service. He was a member of Alpha Omega Alpha, honorary medical fraternity.

For many years Dr. Reese was active in the Phoenix Little Theater and played roles in many of the theater's productions. He also directed many of the productions.

He joined the Little Theater when it was housed in an old barn on the Heard property on McDowell Road, just off Central. He was past president of the Phoenix Little Theater.

He also was a past president of the Phoenix Lions Club, serving in 1929 and 1930. He was a life member of the Arizona Club, a member of the American Medical Association and the Arizona Medical Association and the Maricopa County medical societys.

Dr. Reese resided at 701 W. Monte Vista and is survived by his wife, Anna Mae, a daughter, Miss Jane Reese, Phoenix; and two sisters, Mrs. William Stotts and Mrs. Harry Huffman, both of Vermillion, Illinois.

RUPERT B. RANEY, M.D.

1900—1959

Word has been received of the death of Dr. Rupert Raney, 59, of Los Angeles on November 28, 1959.

Dr. Raney, who died suddenly while on a hunting trip in Indiana, was a prominent neurosurgeon in California. He was past president of the American Academy of Neurological Surgery, a member of the Harvey Cushing Society, a Fellow of the American College of Surgeons, and President of the Western Neurosurgical Society. He was professor of neurosurgery at the University of Southern California.

Dr. Raney was well known in Arizona. He practiced in Phoenix from 1929 to 1932 and was a frequent visitor to the state.

Arizona Medical Association Reports

ANNUAL MEETING QUESTIONAIRE: II

The plans for the 1960 Annual Meeting are complete. The speakers have all accepted the invitation of the Association, final times have been assigned for papers and specialty society meetings, and Auxiliary events, exhibits, and social activities have been fitted into the program. It remains only to let the membership know what pleasures and educational riches await it.

The program has been tailored to the wishes of the physicians who answered the questionnaire mailed last fall. In response to the strong expression of preference for increased stress on professional content, the three general sessions are entirely devoted to scientific presentations. Little interest was indicated in medico-legal and medico-economic topics, and none, therefore, have been scheduled. A dilemma has been posed by a strong demand for talks of practical pertinence for every day clinical practice, and a sizable minority opinion asking for representation of material of research or specialty concern. It is hoped that a solution has been found by careful selection of speakers and thoughtful assignment of subjects and by the provision of ample time for specialty society gatherings, amounting to special sections. Finally, following suggestions on the questionnaire, each scientific session has been centered on a single theme, so that a member will not go for a full day to hear just one paper in his field of particular interest.

The first general meeting, on Thursday, May 5th, is devoted to pediatric and orthopedic medicine, and most of the speakers will present papers of joint interest in the two areas. Specialty pediatric and orthopedic society luncheons will follow, and, as a change of pace, the Arizona Chapter of the American College of Chest Physicians will be host for those who want to hear of recent medical and surgical advances in pulmonary and cardiac disease. Thursday night the Arizona Academy of General Practice will have a banquet with a psychiatric speaker, and the Arizona Society of Anesthesiologists will entertain with an anesthesiologist as featured guest. All these luncheons and dinners will be open to every registrant. The focus of the second day is on psychiatry, with seminars on hypnosis in surgery and on psychiatric problems in the specialties, psychiatric papers, a talk on addiction as seen by the Internal Revenue Department, and a report on psychopharmacology by a research man from a major drug house. The Association has this year invited the latter as one of the regular guest orators, an innovation which it is hoped may be a regular feature in future years, the pharmaceutical firm being chosen by lot for each meeting. Specialty society luncheons on Friday will be held by the Arizona Chapter of the American College of Surgeons, the Arizona Society of Allergy, the Southwestern Obstetrics and Gynecology Society, and the Arizona Society of Pathologists. The third and final scientific session will be given over to various aspects of modern surgical problems and will include, in addition to pure surgical and gynecologic topics, presentations in associated fields such as anesthesia, transfusion reactions, and the internist's role with the surgical patient.

Next month *Arizona Medicine* will give you an account of our guest speakers. To titillate you for the moment we only call the roll: a pediatrician, an anesthesiologist, an allergist, an orthopedic surgeon, a cardiac surgeon, an internist of special competence in the field of respiratory diseases, a top expert from the Internal Revenue Department in the field of narcotic addiction, a psychiatrist, a gynecologist, a pathologist, and the medical director of a leading drug company.

A non-scientific postscript. The Women's Aux-

iliary is again sponsoring a hobby and art show for members of the Association and their wives. Each of you who has an unusual interest or a creative talent, the evidences of which you can be induced to display, is urged to prepare an exhibit. Information may be obtained from the President of the Auxiliary, Mrs. Hiram Cochran, 35 North Camino Espanol, Tucson, Arizona. First, second, and third place ribbons will be awarded in each of at least three categories: fine arts, hobbies, and photography. There will also be a best of show trophy. The exhibition will be housed in the lobby of the auditorium, and, rather than have outside judges, the viewers will be asked to vote their choices. The results will be announced at the President's dinner-dance on Friday night.

If you don't want to put in an entry for the Association's special award paper, we will at least welcome your paintings, your photographs, or your button collection.

PUBLIC HEALTH PROBLEMS IN ARIZONA

It is evident to many of the citizens of the state that the situation in regard to the State Department of Public Health is critical. We have one of the weakest State Health Departments in the United States. It is poorly prepared in terms of organization, facilities, and staff to meet the public health problems that are faced by one of the most rapidly growing states in the United States. Many factors have contributed to this: the unprecedented increase in the population is undoubtedly one, but more basic is the lack of knowledge of the true situation and the lack of interest and concern on the part of the majority of the citizens of the state including, we regret to say, the medical profession.

The present Commissioner of Health is serving a temporary (2 year) term in order to enable the State Board of Health to find a successor. The salary for this position set by statute is so unrealistically low ($10,000) that no adequately trained and qualified public health physician has been interested in the position. It may be noted that in some of the other Western States the salaries for the State Commissioners of Health are: Washington — $17,500, Nevada — $14,676, Oregon — $17,500, Utah — $14,400, New Mexico — $15,000, and Colorado — $16,500.

Salaries for other professional positions in the department are equally low. This might be expected when it is realized that the per capita expenditure for Public Health in Arizona is currently 41.8 cents, whereas an accepted level throughout the country is approximately $1.00. This situation is the principle reason for the resignation of thirty-four members of the department during the past year with several other resignations expected to be announced after January 1st. Except for the dedicated service of a few of the key personnel, the department would be in even worse condition than it is.

As a result of this apathy on the part of the state's citizens and its physicians we have:

1. The highest mortality rate from Tuberculosis in the United States today — 20.7 as compared to 7.8 in the entire United States, 2.5 in Utah and 6.6 in Clorado. This means that the chances of dying from Tuberculosis in Arizona are almost three times as great as they are in most other areas of the United States, and almost nine times as great as in Utah.

2. Arizona ranks second only to New Mexico with an infant death rate of 51.7 as compared to 39.1 for the United States as a whole.

3. Our situation in respect to the communicable diseases, especially the so called "Filth Diseases," is very poor when compared to other western states and the United States as a whole. These facts are especially important when we have seen during the last few months a decrease in the number of badly needed Tuberculosis beds at the State Sanitorium which were closed because of lack of funds, and we have been informed that the State Laboratory is unable to perform certain needed services because of insufficient funds to obtain the necessary equipment and personnel.

What is to be done about this situation and what can we as citizens do to help?

The following list emphasizes some of the most oustanding needs of the State Health Department at the present time:

1. The statutory limit on the salary for the Commissioner must be raised by the Legislature to a level which will allow the State Board of Health to em ploy a qualified successor to the present Commissioner.

2. Similarly there must promptly be salary adjustments in the department in order to hold the

present professional personnel and to attract additional competent personnel into the organization. This will require only that the Legislature reappraise the financial needs of the department with an adequate salary schedule in mind.

3. Epidemiological and laboratory facilities and personnel must be increased, especially in the field of Viral Diseases and Industrial Hygiene.

4. More effective control of the communicable diseases, particularly of Tuberculosis and Diarrheal Diseases, is necessary. This too means more personnel and more adequate laboratory and hospital facilities.

5. Better overall leadership in the development and functions of local health departments. Considerable progress has been made in this field in recent years, but great areas of the state are still without local health services.

6. We badly need an integrated and coordinated School Health Program in our primary and secondary schools. This should be done at a State level and correlated at the County level to fit the various needs of the communities.

7. Closely related to the School Health Program is the need for the development of an adequate Dental Health Service. A start has been made in this through the activity of the State Dental Assn., but much remains to be done.

These are only a few of our needs. In the immediate future, we must take a long analytic look at our overall program of Public Health in the State and plan more concretely for its development. The time is at hand when we must face the problems of Air Pollution and the new industrial health and sanitation problems that the industrial development and the rapidly increasing population are bringing to the State.

Only by the concentrated interest and effort of all of the citizens of the State can we impress upon our legislative bodies the need for a vitalized forward looking State Department of Health adequately staffed, equipped, and supported to give the citizens of Arizona a level of health protection equal at least to the other parts of the United States. In such a program it is only logical to assume that the physicians and dentists of the State will be willing to take an active part as a group interested primarily in raising the health standards of the citizens of the State.

December 18, 1959

PROFESSIONAL COMMITTEE

RELATIVE VALUE FEE SCHEDULE

Wallace A. Reed, M.D., presented the following report containing his views in the matter of possibility of arranging a mutually agreeable Relative Value Fee Schedule for services rendered by doctors of medicine in the State of Arizona applicable to include industrial and commercial usage.

THE PROBLEM...

1. Medical costs are rising.

2. There is growing resentment about the poor coverage provided by most insurance companies.

a. Doctors are blamed.

2. Parties responsible for obtaining health insurance for large groups are blamed (included here are bankers and newspapermen, as well as Union representatives).

c. Insurance companies are blamed. The latter respond by stating that they cannot set up a realistic payment schedule without knowing what the standard fees are for a given community.

3. A tornado is brewing which will force us into socialized medicine soon unless we take appropriate affirmative steps to solve the problem ourselves.

The words of Doctor L. F. Koyl, Contributing Editor of Current Medical Digest, are worthy of consideration in this connection. He states:

"The medical profession is losing its dominance of the social sciences on all counts. It is losing the natural right of leadership because it is tending to become a conservative self-restrictive profession instead of a widely based social science constantly broadening its scope. Society itself is finding the leadership of medicine irksome because medicine no longer talks the language the public wants to hear. Society is interested in the social and economic aspects of medicine. Doctors tend to withdraw from such strange things into the safety of 17-ketosteroid estimations.

"An anchorite in his cave or a monk in his monastery may be dedicated, but not to the common weal. He can have no effect on current events except the negative effect induced by the absence of his counsel. If medicine wants to withdraw into itself and become an esoteric and specialized science, such as atomic physics, the profession will become a follower of public opinion, not its architect; an employee of the public, not a servant of the people."

A practical application of Doctor Koyl's philosophy is broached by Horace Cotton, who wrote in Medical Economics in June of last year that "State Medicine Can't Be Stopped." His chilling conclusion:

"If ever John Q. Citizen gets an American version of Britain's National Health Service, he's going to like it. And you're going to make it

work. As a law-abiding U. S. physician, you'll have no practical alternative.

"So if you don't want state medicine, don't kid yourself that you can hold it at bay simply by saying that it's un-American. Your answer to any proposed American National Health Service must be this: 'We don't need it. We've got something better already.' But it isn't enough for you to believe what you say. The American public has got to believe it, too.

"Because British doctors failed to get that message across, Government medicine fastened itself on that country . . . Today the system is firmly entrenched. I'm afraid that's what will happen here unless American doctors work harder to improve private medical service and to sell the public on it. . . ."

THE SOLUTION...

The solution lies in following the leadership of this Association's Professional Committee which acted favorably on a resolution to the effect that "it is both medically ethical and medically desirable that the county societies accept and in principle approve a standard relative value fee schedule for industrial and commercial groups."

Such a plan has been followed by the Riverside County Medical Association in an agreement reached with Food Machinery Corporation and CPS. Other medical societies have taken similar action.

At a recent meeting in Phoenix, physicians discussed this problem with representatives of management, labor, and an insurance company. The unofficial conclusions reached were as follows:

1. Management and labor both are interested in paying a fair fee for services rendered by physicians, but they would like to know what a fair fee is.

2. In response to the question whether it would help to know that a multiple of 5 (for example) would be considered a fair fee for the local area, the answer was "yes."

3. These people all seem to like us, but they are perplexed by our aloofness.

CONCLUSION...

1. The California Relative Value Schedule represents the first well-thought-out response to the need for a standardized fee schedule.

2. There is reason to believe that such a schedule will be acceptable to the three interested parties: the patient, the physician, and the insurer.

3. The time to adopt such a schedule is at the next Annual Meeting. This will allow time meanwhile for a review and revision of the Schedule by the various interested generalist and specialist groups.

Doctor Reed also presented for review "The Riverside Plan for Health Care" designed to provide "Guaranteed Coverage for Benefits under the Plan with the Physician Receiving His Usual, Customary, and Reasonable Fee."

Doctor Reed further stated that one possible application which would avoid the need to work in any conjunction with the Union would be to try and provide state wide coverage for everybody in the state. We have compulsatory insurance to pay for the automobile liability insurance. I see no reason why we should reject the possibility of such a concept to apply to insurance for health coverage; then, that would eliminate the union leaders as a middle man. If we made an offer known to the entire population that said: "We will give you coverage," and make a real campaign out of it, we could turn it to our advantage and if we made it work in Arizona, it might well be the pattern which would be followed throughout the entire United States. I think if such a plan were followed, it certainly would take the wind of the sails of those who are pushing toward government socialized medicine.

Also presented for the enlightenment of the Committee was a copy of the October 1959 issue of the "News Letter" of the "Association of American Physicians and Surgeons" dealing with "Relative Value Schedules" and the opposition thereto.

Doctor Reed was interrogated at length and considerable discussion was held by the Committee on the subject.

It was moved by Doctor Taber, seconded by Doctor Gregory, and unanimously carried that the Professional Committee strongly recommends to the Board of Directors that it is the firm conviction of the Professional Committee that this matter be thoroughly explored and investigated by an existing committee of the Association; that, if there is no proper committee, therefor, that one be formed; and, that the objective of the committee will be to report and make a recommendation which might be considered at the next regular meeting of the House of Delegates.

Doctor Reed left the meeting at this point.

AGING

Jesse D. Hamer, M.D., delegate to the American Medical Association, presented a detailed report on the activities in the field of Aging including:

(a.) The Salt Lake City, Utah, Conference on Aging held May 8 and 9, 1959;

(b.) The Joint Council for Improvement of Health Care of the Aged held in Washington, D. C., June 12 and 13, 1959;

(c.) The National Leadership Training Institute held in Ann Arbor, Michigan, June 24 through 26, 1959, preparatory to The White House Conference on Aging.

Comments were also offered reporting on the progress being made by the "Steering Committee for The White House Conference on Aging" appointed by Governor Fannin, representing the State of Arizona. Associate with the problem of

"Aging", Doctor Hamer further reported on the hearings, which he attended, representing Arizona, before the Congressional House Ways and Means Committee, July 21, 1959, specifically dealing with H. R. 4700, known as the "Forand Bill," a proposal to amend the Social Security Act to provide for the federal purchase of certain health care services for social security beneficiaries. Some sixteen million persons eligible for social security benefits (mostly those over sixty-five) would be entitled to receive hospital, surgical, and nursing home treatment under a government-run program. The government would contract to pay hospitals, nursing homes, physicians, and dentists for the services they would provide.

Doctor Hamer further reported on the hearings of the (Senate) McNamara Committee on the subject of Aging, which were being held in selected localities throughout the country for the purpose of ascertaining the needs of the "Aging" designed to develop support for the Forand Bill or similar legislation.

Subcommittee on Aging

Doctor Schwartzmann indicated that Doctor Wormley, Chairman of the Subcommittee on Aging, had asked to be released of his assignment.

The Professional Committee determined to request of the President of the Association to make an interim appointment to the Committee, specifically designating such appointee Chairman of the Subcommittee on Aging, requesting Doctor Wormley to continue as a member of the Professional Committee to accept reassignment of duties by that body.

On recommendation of the President, it was directed that Otto E. Utzinger, M. D., of Scottsdale, be contacted to determine whether or not he would serve as an interim appointee to the Professional Committee for assignment as Chairman of its Subcommittee on Aging.

BOARD OF DIRECTORS – ACTIONS

The Board of Directors of this Association in meeting held October 11, 1959, concurred in the following recommendations of the Professional Committee authorized during its meeting of August 9, 1959:

1. That the Board of Dirctors of this Association continue actively its opposition to the Forand Bill H. R. 4700 as an impractical and impossible solution to the problems of the aging.

2. That the Association continue acceptance of and further encourage the development and/or extension of voluntary private and Blue Cross-Blue Shield health insurance programs to include individuals 65 years of age and over. even to the extent of providing coverage for rest home or nursing home care as well as for care in the home itself.

3. Reaffirming the philosophy of conservatism in approaching the problems of aging.

4. Co-sponsoring the 9th annual cancer seminar to be held at the Arizona Biltmore, Phoenix, January 14, 15 and 16, 1960.

In the matter of standard relative fee schedules for industrial and commercial groups, the action of the Professional Committee was considered and amended as follows:

"That is is medically ethical that the county societies may accept the principle of the relative value fee schedule for industrial and commercial groups, the unit value to be separately negotiated for each group."

NORTH MOUNTAIN HOSPITAL

Doctor T. Richard Gregory (Phoenix); Doctor Joseph M. Kinkade, (Tucson); and, Doctor Robert B. Leonard (Phoenix), comprising a special investigation team of this Committee, gave a preliminary report on the investigation of the North Mountain Hospital, Phoenix, conducted with the full cooperation of Kenneth E. Hall, M. D., Director of that institution.

It was determined that no recommendations be made or action taken at this time until the investigating committee correlates the results into one report to be submitted at an early date.

For the information of the Professional Committee, it was also reported that the Joint Commission on Accreditation of Hospitals is to conduct a survey of the North Mountain Hospital in the very near future on application of the institution for accreditation. It was suggested that legal advice might be sought as to whether or not the survey report could be made available to this Committee.

SUBCOMMITTEE REPORTS

Aging

In the absence of Doctor Wormley, he submitted the following written report:

"I have attempted to abstract the material that you sent me and also that which I had in my possession prior to receiving your bundle.

July 21, 1959 from Washington, D. C.

Dr. Jesse D. Hamer submits a report to the House Ways and Means Committee on H. R. 4700 as a member of the House of Delegates of the American Medical Association from Arizona. Dr. Hamer pointed out the importance of lay and professional councils at the state level to study the health problem of all age groups in the community; the importance of preventive medicine. Pointed out also the non-restrictive character of the Arizona Blue Cross-Blue Shield policies that have been in existence for some years.

Sept. 10, 1959 from Washington, D. C. also – we have a progress report of the McNamara Committee. Mr. McNamara reported to the Senate on the problems of the aged and aging "Adequate income, decent housing, good health and a dignified place in society for our 15½ million citizens over 65 years of age and 20 million over 60 are among the most important problems cur-

rently facing the Congress and Nation." "In preparing for this study, some of the most informed people in the nation were asked to meet with members of the subcommittee. The facts that were brought out by these people were as follows: 'In 1900 there were only 3 million Americans over the age of 65. Today there are nearly 16 million and in 10 years there will be an estimated 20 million.' " McNamara's Committee of experts also brought out the fact that 60 per cent of those over 65 have less than $1,000 a year in money income. Investigation brought out also that a crisis could be caused by two forces alone; First, the rapid increase in the number and the proportion of Americans over the age of 65 and second, the gradual but definite decrease in the proportion of such people in the labor force. No. 3, the medical needs of the aged include:

(1) Deterioration should be prevented rather than repaired.

(2) Rehabilitation necescary for those restored to good health by modern medicine.

(3) Aged persons require 2½ times as much hospital care as the younger groups.

(4) Inadequate hospital and surgical insurance exists today.

(5) Financing of medical care on a subsistence income is almost impossible.

The statement of the American Medical Association to the Subcommittee of Senator McNamara of problems of the aged were expressed by Dr. Fred C. Swartz, Chairman of the A.M.A. Committee on Aging, on August 5, 1959. Dr. Swartz's report might be summarized by the following quotation from his report:

"In our society, the responsibility for taking care of the old person rests primarily with his family. If the family cannot fulfill this responsibility, then it passes to the community, then to the State. Only as a last resort should the federal government step in."

Abstract as of July 21, 1959 — the procedure of the McNamara Committee on aging with its invited participants is here outlined. All findings and legislative recommendations are to be reported before January 31, 1960. Seven major subjects will be examined during the series of hearings, July 23rd to 24th and then July 28th to 30th and August 4th to 6th. Later in the year other hearings will take place in a number of leading cities. The seven subjects to be discussed are as follows:

1. Housing for the elderly and the responsibility of the Federal government.
2. Job discrimination against the worker over 45.
3. Financing adequate medical care for the older person.
4. Conditions of nursing homes, and the problem of setting decent treatment standards.
5. Measures to prevent physical and mental deterioration of older persons.
6. Adequate income for retired persons.
7. Elements necessary to ensure a productive, meaningful life for those retired from regular employment.

Invited to appear before the committee were representatives of:

Department of Health Education and Welfare
Department of Labor
Veterans Administration
Civil Service Commission
Housing and Home Finance Agency
American Medical Association
Food and Drug Administration
Senator Jacob H. Javitz of New York
Newspaperman Paul R. Leach
Clinton S. Golder, Vice Pres., United Steel Workers of America AFL-CIO
American Legion
American Dental Association
American Nursing Home Association
Volunteers of America
Nat'l Association of Blue Shield Plans
American Nurses Association
American Public Health Association
National Committee on Aging
and many others

Abstract as of August 20, 1959, coming from the office of Senator McNamara from his Committee on Aging is the following statement: Older citizens themselves are to be heard pretty soon by the Subcommittee on aging at hearings to be held in cities across the nation during the months of October, November and December.

The Subcommittee that will hear these oldsters in their own back yard will consist of Senators John F. Kennedy, Joseph F. Clark, Jannings Randolph, Everett M. Dirksen and Barry Goldwater.

Abstract as of Sept. 18, 1959 and released also from Senator McNamara's office and stated by the Senator in one of his speeches in which he reiterated many of the points he has previously spoken about is the following:

"We hope that the work of this Subcommittee will lay the foundation for a systematic consideration by the Senate of the needs of our older citizens, and the contributions they can continue to make to the Nation."

October 12, 1959 — Summary of some of the expert views before the McNamara Committee. The highlights of these views might be briefly stated as follows:

"The growing size of the older population of America can be used — even exploited — for good or for bad, depending on whether or not the older citizens receive a 'fair deal' from the rest of the country. Testimony revealed that when communities have taken older citizens' needs into account, the older citizens have approved programs for all the residents. On the other hand, it was pointed out the older citizen in a number of communities are showing their resentment against being 'left out' by voting

against local school bonds and village proposals.

"One witness said, 'If we do not meet the needs of the senior citizens, and help them to be contributing members of society, we are endangering our democratic system of government. Instead of democracy, we may very easily have a gerontocracy.'"

Abstracted as of October 27, 1959. Note is made of the receipt by the Society of a copy of the Proceedings of the First National Conference of the Joint Council to Improve the Health Care of the Aged, held in Washington, D. C., June 12 and 13. A report on this will be given at this meeting by Dr. Jesse Hamer.

October 19, 1959 — The following is a report of the McNamara Committee meetings held in Boston October 13 and 14. The major portion of the audience consisted of older persons and attendance reached a high of 400 at one time. In all 34 witnesses gave oral testimony before the committee. In addition, a number of others submitted written testimony which was to have been made a part of the record. Ten of the witnesses endorsed the principle of Forand type legislation in their presentations. These endorsements came primarily from politicians, career public health officers, university professors, and others committed to the philosophy of expanded government intervention in all walks of life.

October 26, 1959—Report of McNamara Commitee meetings held in Pittsburgh, Pa. October 23rd, Representative William S. Moorhead proposed conversion of downtown hotels into retirement homes for the elderly.

The Director of Catholic Charities, United Jewish Federation and Director of the Pittsburgh Lutheran Service Societies all agreed that the problems of the elderly are essentially local responsibilities.

Dr. Daniel H. Bee, Chairman of Pennsylvania State Society's Board of Trustees stated:

1. His medical society is composing plans for a significant reduction in the cost of medical care to the elderly.
2. Sol Stetin, Regional Director of Textile Workers Union of America, "Great need for the Forand Bill and predicted it will be adopted."
3. United Workers called for a "cradle to grave security for Americans as the birthright of every American." The Union proposed free medical care to everyone in this country through a British type program.

NEWS ITEMS:

Research on the use of *H3* in the treatment of old age and other diseases.

By the Pharmical Company of Los Angeles. This drug is a derivative of procain called Papacaine and used with reported success in Roumania and Germany. Dominant 5 CC ampoules, given inter-muscularly three times a week for four weeks with a rest period of ten days. It is said to accomplish the following:

1. Appears to make old people younger than their actual age.
2. They experience a marked improvement in general health.
3. Some find new hair growth and youthfully dark in color.
4. Restores hair to the bald.
5. Brain functions improve.
6. Circulation seems to improve.
7. Has helped arthritis tremendously.

ADDITIONAL NEWS ITEMS:

Dr. David R. Allman, past President of American Medical Association, proposes a national "Jobs for the Aged Campaign" at a conference of health of aged in Boston.

New York Labor Unions are considering establishing their own hospitals and a medical insurance system to compete with the Blue Cross and Blue Shield.

ADDITIONAL ITEM:

Maricopa County Medical Society and its auxiliary are to be addressed by Dr. Dermont Melick, President of Arizona Medical Association, on the implications of the Forand Bill. Dr. Melick will also participate in a panel discussion of this problem and the problem of the aging with the other members of the American Medical Association at a special meeting to be held by the Maricopa County Medical Association on November 5th."

It was moved, seconded, and unanimously carried, that we accept the report as submitted.

Cancer

DOCTOR LEONARD: "I have received a letter from the Executive Director of the Cancer Society at the request of Hermann S. Rhu, M.D., of Tucson, that the Professional Committee conisder and recommend to the Executive Board approval of the statistical survey, which was instituted by the American Cancer Society to cover a total of fifty thousand families in the United States. It will cover five thousand families in the State of Arizona, done on a voluntary basis under direct command through the American Cancer Society, by which over a ten year period these various families will be reported to the American Cancer Society, Division of Statistics. These are confidential reports. It does not involve a doctor's time nor effort except where a death occurs, in which event, the doctor will be requested to fill in a card, with the cause of death or a copy of the death certificate could be made. The statistical analysis of these fifty thousand families over a period of ten years will be obtained in an effort to track down many factors on environmental factors in cancer, etc. This has been passed and approved by the American Medical Association as a worthwhile project; and, several states, I don't know the exact number, have approved it through their councils. It has been requested by Doctor Rhu, through James Bunker, Executive Director of

the Cancer Society, that I request this approval from this Committee."

It was moved, seconded, and unanimously carried that the Professional Committee recommend to the Board of Directors that the Arizona Medical Association, through them, approve this survey as it is being effected through the American Cancer Society's national office through local volunteers.

Doctor Leonard reviewed the Tobacco and Health Journal of the Tobacco Institute, Inc., together with its editorial policies and objectives, decidedly favorable to the tobacco industry, for the information of the Professional Committee. It was suggested that should such policies and objectives become completely objectionable, we may wish to bring it to their attention.

Civil Defense and Safety

No report.

Crippled Children

Doctor Taber reported on the status of the survey of the crippled children's facilities in the State of Arizona.

It was directed that the Subcommittee continue its investigations in the field of crippled children's services, particularly as regards the Children's Colony and its lack of space and services to cover all of the problems in this field. It was further suggested that the Committee urge the Legislative Committee to direct its attention to needs dealing with the Children's Colony on the state legislative level.

General Medicine

Doctor Farness submitted the following report on matters dealing with poison control: A meeting on Poison Control was held October 26, 1959, at the College of Pharmacy, University of Arizona, Tucson.

It was agreed to adopt new report forms as recommended by the National Clearing House for Poison Control Centers.

2. Five additional Poison Control Treatment Centers will be activated in 1960 in the localities of Parker, Mesa, Nogales, Wickenburg, and the Miami-Globe area.

3. Discussion in regard to the use of Ipecac as an emetic instead of gastric lavage in cases of poison ingestion resulted in the feeling that there was insufficient evidence at present to warrant a recomendation by the Poison Control Information Center on the use of Ipecac.

4. It is felt that the Arizona Poison Control Program should be represented at the Annual Meeting of the Association of Poison Control Centers, preferably by a member of the College of Pharmacy faculty. As travel allowances are limited, it will not be possible for a faculty member to attend. Discussion on ways and means of obtaining funds for this purpose did not produce any concrete results.

5. Discussion on funds led to the subject of publicity for the program in general. Many ideas were forthcoming such as short presentations at County Society meetings throughout the state, talks by doctors to various groups such as service clubs, PTA, etc. The College of Pharmacy is anxious to help anyone who wishes to give a talk on Poisoning Control, with pamphlets, statistics, and a film entitled, "One Day's Poison," which may be obtained from the Department of Health in Phoenix, or the Visual Aids Department of the University of Arizona.

6. It was recommended that the pharmacists be urged to use safety cap bottles on all prescriptions they dispense. If practicing physicians will request safety cap bottles on all prescriptions they write, the pharmacists will become more aware of the necessity of such precaution and will co-operate in this endeavor.

Doctor Farness further reported on receipt of a directive from the Board of Directors through William B. Steen, M. D., (Tucson), regarding a communique from William Ure, M. D., pertaining to the fact that financial assistance for single individuals with tuberculosis on home care are not entitled to any assistance under the Tuberculosis Control Act, in accordance with an opinion rendered by the Attorney General. This matter has been referred back to the Arizona Tuberculosis and Health Association for further consideration.

Hospital and Nursing Problems

Doctor Melick reported on his activities before the Arizona State Nurses Association for the information of the Committee, urging that all members of this Association make it a point to contact the nurses of Arizona in their respective areas, carrying to them the many hidden, adverse implications of the Forand issue and seeking their support in prevention of passage of this measure.

It was further suggested that this matter be directed, through Doctor Kinkade, to the attention of Francis J. Bean, M.D., Chairman of the Subcommittee on Nursing of the Professional Liaison Committee, advising there is apparently a definite need for liaison between the doctors of medicine and the nurses of Arizona.

Maternal and Child Health

Doctor Johns gave the following report on Maternal and Child Health:

As you remember in May of 1959, the Arizona Medical Association House of Delegates passed a resolution calling for the approval of agents other than silver nitrate for use in prevention of gonorrheal ophthalmitis. The Graham County Medical Society has written letters requesting that this resolution be followed, as has Yavapai County Medical Society, and Dr. William Davis of Tucson. However, in discussion with the State Health Department, the representatives from Pinal County Pediatric Society, the Maricopa County Pediatric Society and the Arizona Pedi-

atric Society, plus the recommendations of the American Academy of Pediatrics Committee, on fetus and newborn, which I list below; all these organizations prefer to continue with the present rules and regulations. I, therefore, recommend that the Board of Directors take no action, as requested, in this resolution.

Conclusions of the committee on fetus and newborn of the American Academy of Pediatrics are as follows:

(1) Gonorrheal ophthalmitis still constitutes a definite hazard to the newborn infant.

(2) Silver nitrate has amply demonstrated its effectiveness as prophylactic of gonorrheal ophthalmia.

(3) The occurrence of non-specific conjunctivitis does not, of itself, constitute adequate reason for change.

(4) The routine use of antibiotics may introduce further problems referrable to control of infections of the newborn.

It was moved by Doctor Johns, seconded by Doctor Kimball, and unanimously carried that this Committee recommend that the Board of Directors take no action, as requested in this resolution presented before the House of Delegates for preventive treatment in the eyes of the newborn.

Doctor Johns further reported that the problem of distribution of polio vaccine through labor groups has been apparently resolved through the co-operation of pharmaceutical manufacturers of the vaccine.

Mental Diseases

Doctor Gregory reported that he had received nothing further from the Western Interstate Commission for Higher Education regarding its Post-Graduate Clinical Psychiatry Regional Project for non-psychiatric physicians; although, it has been rumored that Phoenix has been selected as one of the sites for conducting the program.

Rehabilitation

Doctor Fife reported on the status of a survey undertaken among the component county medical societies as recommended in the American Medical Association's "Medicine's Back to Work Plan."

It was suggested that a copy of American Medical Association's brochure entitled, "Medical Guide to Phyiscians for Determining Fitness to Drive a Motor Vehicle," be obtained and forwarded to every member of the Association.

Venereal Diseases

At a meeting of the Board of Directors of this Association, held October 11, 1959, it was commented that in the light of recently expressed medical opinion, the pre-marital serological examination law be reviewed and comments or recommendations of any indicated changes should be directed to the Board for its further attention.

It was directed that this item be placed on the agenda for the next meeting of the Committee allowing Doctor Stolfa ample opportunity to delve into the problem and make definite recommendations.

Lorel A. Stapley, M.D.
Secretary
by Robert Carpenter
Executive Secretary

PROFESSIONAL LIAISON COMMITTEE

SUBCOMMITTEE ORGANIZATION

Allied Professions — Robert H. Cummings, M.D., Chairman. Membership: Doctors George Fraser (Tucson); Reed D. Shupe (Phoenix); Noel G. Smith (Phoenix); and Marcus W. Westervelt (Tempe).

Arizona AMEF — Harold W. Kohl, M.D., Chairman. Membership: Doctors Guy B. Atonna (Douglas); Delmer J. Heim (Tucson); Joseph P. McNally (Prescott); and Harold J. Rowe (Tucson).

Association of Physicians and Surgeons — Lavern D. Sprague, M.D., Chairman. Membership: Doctors Walter Brazie (Kingman); Allan B. Carter (Tucson); Walter V. Edwards (Phoenix); Oscar W. Fiske (Ajo); and James T. O'Neil (Casa Grande).

Careers — Zenas B. Noon, M.D., Chairman.

Governmental Medical Staffs — William G. Payne, M.D., Chairman. Members: Doctors Ian M. Chesser (Tucson); Albert G. Wagner (Phoenix); Marcus W. Westervelt (Tempe); and MacDonald Wood (Phoenix).

Nurses — Francis J. Bean, M.D., Chairman. Members: Doctors Melvin L. Kent (Mesa); Frederick A. Knight (Safford); Bertram L. Snyder (Phoenix); Eleanor A. Waskow (Phoenix); and Roy O. Young (Flagstaff).

Public Health — Ben P. Frissell, M.D., Chairman. Members: Doctors Walter Brazie (Kingman); Frederick W. Knight (Safford); E. Henry Running (Phoenix); Hugh H. Smith (Tucson); and Roy O. Young (Flagstaff).

Schools — Noel G. Smith, M.D., Chairman. Members: Doctors Stanford F. Farnsworth (Phoenix); Fred L. Goff (Douglas); E. Henry Running (Phoenix); James B. Wenzel (Flagstaff). Note: Jack H. Demlow, M.D. (Tucson) declined appointment to the Sub-committee on Schools.

Woman's Auxiliary — Robert E. Hastings, M.D., Chairman. Members: Doctors James E. Brady, Jr. (Tucson); Philip E. Dew (Tucson); Walton C. Finn (Tucson); Frederick J. Lesemann (Tucson); and Harry E. Thompson (Tucson). Note: Doctors Dennis Bernstein (Tucson); David S. Forsyth (Tucson); and Louis E. Young (Tucson) have not accepted nor declined appointment to the Subcommittee on Womans' Auxiliary to date.

General

Considerable discussion ensued in review of the scope of activity and responsibility of each subcommittee. In the light of the recent directive of the Board of Directors, each such subcommittee will function as a separate body, record its own proceedings through appointment of a secretary within its membership, and forward its reports and recommendations to the parent body, the Professional Liaison Committee. The chairman shall plan and develop an active program which shall be constructive, protective and informative. If necessary, the Central Office will assist in the call of the meeting.

Actions of the Professional Liaison Committee will be transmitted to the Board of Directors for its consideration and final determination.

SUBCOMMITTEE REPORTS

Careers

Doctor Melick outlined his views and objectives in the creation of this subcommittee of which Doctor Noon has been appointed chairman. Considerable time was expended in review of the most effective approach to be pursued in the selection of the membership to comprise this subcommittee keeping in mind fields of practice and geographic location as all areas in the state are equally concerned and interested. Each county was reviewed and many recommendations were presented. Doctor Melick was requested to give consideration to each and submit his recommendations to Doctor Noon for further review and approval, appointments to be consummated at the earliest possible time to enable further development of this activity.

Doctor Melick reviewed the program of the TST group (Tomorrows Scientists and Technicians) which on the surface appears to have much merit. It was determined that Doctor Melick would further investigate this program advising the Committee on its operations.

Governmental Medical Staffs

It is recognized that activity of this subcommittee on the most part will generate out of problems arising from time to time within governmental medical staffs and possibly affecting medical practice without such agency areas. It will be required of the subcommittee to be alert and available for consultation whenever indicated.

Nurses

Doctor Melick assured this subcommittee of much activity in the months ahead to develop better liaison and understanding between the registered nurse and the doctor of medicine in an endeavor to restore the confidence and respect each had for one another in the past. Review of his recent experiences while attending the annual meeting of the Arizona Nurses Association convened in Yuma, especially as pertains to the Forand Bill H.R. 4700, was recited.

Doctor Bean recommended the Committee accept the invitation of the Arizona League of Nursing to participate in the activity of its newly appointed Maternal and Child Health Council. It was suggested that inasmuch as Doctor Young has as yet to be given a specific assignment, that he be officially designated its representative and serve in such capacity which was unanimously concurred in.

Public Health

Doctor Frissell reported that no formal meeting of this Committee has been held to date. There have been several communications by letter between the various members of the committee, several telephone calls and likewise several personal visits with individual members.

The question of the controversy over the State Public Health Department's multiphasic screening program has been considered. The Committee does not feel that this program constitutes an infringement on the private practice of medicine, which was apparently one of the prime controversial phases of the problem. There is some question in the minds of some of the Committee members as to whether this type of program represents the most efficient Public Health effort. It is our belief that this fact is a strong argument in the favor of building a stronger State Health Department which does not have to lean too heavily on federal appropriations, as is the case at the present time. The above program is one sponsored and financed

by U. S. Public Health grant and not one financed out of State Public Health appropriations.

Considerable research and exploration has been made by the Chairman of this Committee into the problem of trying to assist and improve our State Health Department. From many different areas we have been reminded forcefully of the negligence of the doctors of the state in not supporting an adequate Public Health program. This is the feeling of legislators, lay people and other professional people throughout the state. This problem would appear to resolve itself into two phases: one, a stopgap type of program to try to calm the seas at the time of the next legislative session in January. Beyond that there is a long term program necessary to bring about an awareness of the Public Health needs of the state to the citizenry at large, particularly through many of its civic organizations such as PTA, Federated Womens' Clubs, various men's civic clubs, etc., and of course the long range aim of trying to impress the majority of the legislators of this state as to these needs.

And last, but not least, the very definite need for an appreciation on the part of the rank and file of the private practitioners of medicine in the state of their responsibility in this field of health endeavor.

Doctor Frissell outlined for the Committee, two resolutions that were presented before the House of Delegates of the Association having to do with Public Health Department procedures; the determination of the Cochise and Graham County Medical Societies declining to complete multiphasic program of the Arizona State Department of Health including diabetes detection and requesting only the section of the program covering communicable diseases; and the problems of the State Health Department together with its anticipated plans for future development of services, indicating that the Arizona Medical Association must become interested in and take an active part in this program.

It was determined that the Subcommittee should meet with the Cochise and Graham County Medical Societies seeking their understanding, cooperation and aid in the proper handling of this problem.

Schools

The general problem to be met by our committee was thoroughly discussed, and a plan of approach to the state-wide problem of school health was outlined. The consensus was that a syllabus of a School Health Program should be drawn up to fit the needs in Arizona. This should then be presented to the Professional Liaison Committee for their consideration, and eventually considered by the House of Delegates at the Annual Meeting for approval and aid in establishing such a syllabus in the schools throughout the state.

It was felt that the preliminary outline of our program should contain the following:

1. General principles of operation of a school health program.

2. Plan for establishment of adequate preschool physical examinations.

3. Plan for adequate interval screening exams, and arrange for any corrective measures through physical education programs, etc.

4. Evolve a suitable method of providing proper immunization to all school children (initial and booster) throughout the school years through their own family physicians or through established clinics for indigents, rather than by mass inoculation programs.

5. Provide standardized school health records throughout the state.

6. Urge the appointment of school physicians for all school districts throughout the state.

7. Provide for coordinated approach to all school health problems as they may arise.

8. And finally, to integrate this program when once finally approved with school administrations, state, and local health units, the school physicians, and the local medical societies.

We felt that our ultimate goal should be the presentation at the Annual Meeting of the Arizona Medical Association, Inc., of a well thought-out program of School Health Administration which we would like to urge the Association to approve at that time.

We are well aware that formulating a plan is the simplest part of our problem, and that once the plan is approved by the State Association, that the real job of selling such a program to the school administrators throughout the State begins.

Realizing the broad scope of our problem individual assignment was made to each of the committee members for special study and recommendations.

We would appreciate the Liaison Committee's comments on our plan of approach and would like their approval of same.

Doctor Smith was commended by the Committee for his Subcommittee's work on the part of the problems of School Health in the State of Arizona.

LOREL A. STAPLEY, M.D.
Secretary

By ROBERT CARPENTER
Executive Secretary

BOARD OF MEDICAL EXAMINERS STATE OF ARIZONA

The Board of Medical Examiners of the State of Arizona at a regular meeting held Saturday, October 17, 1959, issued certificates to practice medicine and surgery in this state to the following doctors of medicine:

Anderson, Robert D. (GP), 753 East McDowell Rd., Phoenix, Arizona

Brown, Richard E. (Pd), 1150 North Country Club Drive, Mesa, Arizona

Capp, Charles D. (GP), 2340 Albro Boulevard, Tucson, Arizona

Chapman, John E. (GP), University of Arizona — Dept. of Student Medicine, Tucson, Arizona

Collopy, Bernard J. (GP), Box 342, Miami, Ariz.

Cuvillier, Jr., Louis M. (GM-S), 1407 Woodside Parkway, Silver Spring, Maryland

Esquivel, Raymundo J. (Anes), 2806 South 7th Avenue, Tucson, Arizona

Forrer, Graydon R. (P), 307 East Court, Flint, Michigan

Fowkes, Jr., William C. (GP), Miami Inspiration Clinic, Miami, Arizona

Gerster, Carolyn T. (I), 3131 North 7th Avenue, Phoenix, Arizona

Hauber, Frank D. (GS), 608-610 South Union Avenue, Havre de Grace, Maryland

Ireneus, Jr., Carl B. (GS), 224 South Michigan Avenue, Chicago, Illinois

Johnson, Ronald G. (GP), 1000 E. Minnehaha Parkway, Minneapolis, Minnesota

Kerr, Margaret L. (Anes), 934 E. Stella Lane, Phoenix, Arizona

Levison, Charles L. (GP), PHS Indian Hospital, Sacaton, Arizona

Liccione, William J. (I), Pima County General Hospital, Tucson, Arizona

Lueker, Richard D. (GP), San Manuel Copper Co. Hospital, San Manuel, Arizona

McGaughey, Clark G. (GP), 34 East Stetson Drive, Scottsdale, Arizona

Marks, Jack A. (P), 2500 East Van Buren Street, Phoenix, Arizona

Robertson, Leo E. (GS), 719 Sheridan Avenue, Cody, Wyoming

Saab, Joseph R. (GP), 585 Ridge Road, Lackawanna, New York

Sandor, Feszty Katalin T. (R), 81 E. Monte Vista Road, Phoenix, Arizona

Sharkey, Paul C. (NS), 1715 East Amelia, Phoenix, Arizona

Smith, Merle E. (PH), Coconino County Health Dept., Flagstaff, Arizona

Sokoloff, Burton Z. (GP), U.S. Army Dispensory, Preventive Medicine Division, Fort Bliss, Texas

Zeno, Ross R. (GS-GP), 326 South Main Street, Akron, Ohio

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Topics of Current Medical Intrest

SUMMARY OF THE PROCEEDINGS OF THE SCIENTIFIC SESSION AT THE ANNUAL MEETING, OCTOBER 26-27, 1959

The Scientific Session at the Society's 1959 Annual Meeting was devoted to an evaluation of early diagnosis of cancer. A symposium brought together some 40 of the nation's leading family physicians, cancer specialists and scientists who presented papers and participated in panel discussions before an audience of physicians from all other the United States concerned with this problem.

There was no question that early detection is still the best weapon in the fight against cancer. The feeling was that current methods of treatment can be most effective in early, localized cancers, and that the greatst immediate progress has to come in the fields of detection and early treatment.

The first session took up the discussion of the economics of cancer detection. Dr. Leona Baumgartner, New York City Commissioner of Health, reported that it cost the city about $3,000 per case to find a cancer by routine examination of apparently well persons. However, she reported that it cost only $3.00 for the uterine cell examination in detection of cancer of the womb. Dr. Baumgartner feels that it might be possible to solve the high cost of case-finding by developing simple laboratory tests, like the "Pap" smear, which could be performed on persons known to be high-risk as regards certain types of cancers.

The second session examined the value of periodic examinations in cancer detection. Reports from Minneapolis, Baltimore, Bethesda and other areas revealed how much more curable cancer is in its early stages than in the advanced stages.

Capt. Robert B. Brown, Chief of Surgery at the U. S. Naval Hospital in Bethesda, reported and discussed 26 cases of lung cancer which were picked up in annual checkups of military personnel. He reported a five year survival rate of about 20 per cent as compared with the national average of survival in lung cancer of only about five per cent.

Doctors from the University of Minnesota Hospitals reported that their patients whose gastrointestinal cancers were found through regular checkups enjoyed a 5-year survival rate two or three times better than the national average for gastrointestinal cancer. It was also found that patients whose cancers were detected before the appearance of symptoms fared better than symptomatic patients. Over 62 per cent of their patients with gastointestinal cancer who were in the asymptomatic group survived at least 5 years.

Dr. Edward F. Lewison of Johns Hopkins University School of Medicine reported that in their series of breast cancer cases the 5-year survival rate among women whose disease had not spread beyond the breast was twice that of the women whose disease had already spread.

Reports presented on the value of periodic examination for cancers of the head and neck and of the cervix emphasized the importance of early cancer detection.

The third session dealt with precancerous lesions and their treatment. A prediction that the current survival rate of 33 per cent could be increased to 50 per cent with early detection and treatment came from Dr. R. Lee Clark of the M. D. Anderson Hospital in Houston. However, Dr. Russell S. Boles of Philadelphia and Dr. Fred W. Stewart of New York pointed to many unknowns and dangers in the field of precancerous lesions. It was Dr. Boles' contention that too much surgery was done to remove precancerous lesions which in fact rarely became malignant. He called for a great expansion of research devoted to the study of man in his

native environment as the most significant way of finding the causes of cancer. Dr. Stewart warned that the term "precancerous" is very much abused and he emphasized the need for establishing the validity of precancerousness before calling a suspicious lesion "precancerous."

Dr. Thomas J. Anglem of Boston and Dr. John C. McClintock of Albany reported that radiation of the thyroid of infants and children is likely to be a cause for the later development of thyroid cancer.

Dr. E. Cuyler Hammond, the Society's Statistical Research Director, reinforced the earlier asserted need for case-finding among individuals with high cancer risk. He pointed out that there are numerically not enough doctors in the United States to perform routine examination on all adults at frequent intervals. Dr. Hammond said that results of the Society's Cancer Prevention Study inaugurated this year might make it possible to identify selected high risk groups which would then become the specific focus of early cancer detection programs.

The final session was devoted to a discussion of treatment of early cancer. Dr. Jerome A. Urban, of Memorial Hospital, New York, commenting on 1,000 cases of primary breast cancer treated by radical mastectomy and x-radiation, reported that the 5-year survival rate rose to over 70 per cent for early cases in which the disease was not clinically apparent and was only 52 per cent in the group who already had clinically diagnosable lesions.

In sum, the symposium found need for improvement in two chief problem areas. In the first, more clinical knowledge is needed about relationship between a patient and his tumor, as well as about the biological nature of cancer itself; also, more definite answers are needed to the questions of what is early cancer and what is a precancerous lesion. The second problem is rooted in the area of case-finding. The need here is to find an easier and less expensive way to find cancers earlier.

Dr. Arthur J. Present

Dr. Arthur J. Present, Tucson, was unanimously elected Chairman of the Board of Chancellors, The American College of Radiology, at the Chancellors' Fall meeting in Cincinnati. He succeeds Dr. Earl E. Barth, Chicago, Illinois, whose term as Chairman ends in February, 1960. Dr. Present assumed his office following the Febuary Mid-Winter meeting of the Chancellors in New Orleans, February 3 and 4, 1960.

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REFERENCES:

1-11. Papers read at Seventh Symposium on Antibiotics, Washington, D. C., November 4-6, 1959.

12. Phillips, F. M.: DECLOMYCIN—Seventh Interim Report. Department of Clinical Investigation, Lederle Laboratories, Pearl River, N. Y., December 4, 1959.

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genitourinary infection. Roberts, M. S.; Seneca, H., and Lattimer, J. K.,[1] New York, N. Y.—Ninety-one per cent of the Gram-positive and 27 per cent of the Gram-negative, among 66 organisms cultured from genitourinary infection, responded to DECLOMYCIN. Serum antibiotic activity was found three times greater than with tetracycline.

toleration. Boger, W. P., and Gavin, J. J.,[2] Norristown, Pennsylvania—Side effects with DECLOMYCIN were minimal. When dosage was 0.5 to 1 Gm. daily in divided doses, only two of 82 patients exhibited nausea.

activity level sustentation. Kunin, C. M.; Dornbush, A. C., and Finland, M.,[3] Boston, Massachusetts—Of the four tetracycline analogues, DECLOMYCIN Demethylchlortetracycline showed the longest sustained activity levels in the blood.

gonococcal infection. Marmell, M., and Prigot, A.,[4] New York, N. Y.—Of 63 cases of gonorrhea, 61 promptly responded after short courses of DECLOMYCIN. Therapeutic effect was found equal to that of intramuscular penicillin.

bronchopulmonary infection. Perry, D. M.; Hall, G. A., and Kirby, W. M. M.,[5] Seattle, Washington—Of 30 cases of acute bacterial pneumonia, all were afebrile following two to 10 days of treatment with DECLOMYCIN. Results were good in 21.... All of six patients with acute bronchitis responded promptly.

pediatric infection. Fujii, R.; Ichihashi, H.; Minamitani, M.; Konno, M., and Ishibashi, T.,[6] Tokyo, Japan—In 309 pediatric patients with various infections, DECLOMYCIN was effective in 75 per cent.

urogenital infection. Vineyard, J. P.; Hogan, J., and Sanford, J. P.,[7] Dallas, Texas—Clinical response in pyelonephritis correlated well with results of *in vitro* sensitivity tests, which showed some strains of *A. aerogenes*, Proteus and Pseudomonas more susceptible to DECLOMYCIN Demethylchlortetracycline than to its analogues.

pneumonia. Duke, C. J.; Katz, S., and Donohoe, R. F.,[8] Washington, D. C.—Results were satisfactory in all but two of 32 cases of acute bacterial pneumonia, of which only 11 were uncomplicated. No side effects were observed.

brucellosis. Chávez Max G.,[9] Mexico, D. F., Mexico—All of nine patients with *Br. melitensis* infection were afebrile after five days on DECLOMYCIN. Blood cultures were negative in all cases on the 20th day. Side effects were limited to slight temperature increases which abated in four days.

pustular dermatosis. Blau, S., and Kanof, N. B.,[10] New York, N. Y.—Results with DECLOMYCIN were excellent in both of two cases of impetigo, one of two cases of folliculitis, six of nine cases of furunculosis, all of three cases of acne rosacea and 26 of 45 cases of acne vulgaris. Overall, results were excellent or good in 85 per cent.

antibacterial spectrum. Finland, M.; Hirsch, H. A., and Kunin, C. M.,[11] Boston, Massachusetts—DECLOMYCIN Demethylchlortetracycline was found the most effective of the tetracycline analogues against two-thirds of 680 normally sensitive strains of 15 separate species.

the over-all picture. Combined results reported by 210 clinical investigators[12]—DECLOMYCIN produced a favorable response (cured or improved) in 87 per cent of 1,904 patients. Two-thirds of the patients received one capsule every six hours. Treatment was continued for as long as 180 days, but was between three and eight days in most. Side effects were seen in 9.9 per cent, but necessitated discontinuance of treatment in only 1.8 per cent.

LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

Future Medical Meetings and Postgraduate Education

Phoenix Surgical Society

Lecture — March 8, 1960 — 8:30 p.m. "Surgical Treatment of Duodenal Ulcer — Changing Concepts," Dr. Jack Farris, Professor of Surgery, UCLA. Mountain Shadows Resort, East Lincoln Drive, Scottsdale, Arizona.

American College of Chest Physicians

The Council on Postgraduate Medical Education of the American College of Chest Physicians of the 13th Annual Postgraduate Course on Diseases of the Chest at the Sheraton Hotel, Philadelphia, March 14-18, 1960.

The most recent advances in the diagnosis and treatment of heart and lung diseases, medical and surgical aspects, will be presented.

Tuition for this five-day course will be $100, including round table luncheon discussions.

Further information may be obtained by writing to the Executive Director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

The Dallas Southern Clinical Society

The Twenty-Ninth Annual Spring Clinical Conference of The Dallas Southern Clinical Society is scheduled for March 21, 22, 23, 1960, with all meetings at the Statler Hilton.

The Southwestern Surgical Congress Twelfth Annual Meeting

The Southwestern Surgical Congress is meeting in Las Vegas, March 28, 29, 30 and 31, 1960. The Riviera Hotel will be headquarters.

The scientific program runs throughout the four days of the meeting and embraces five guest speakers presenting papers, as well as the organization. The guest presentations will cover General Surgery, Cancer, Vascular Surgery, Obstetrics-Gynecology and Hand Surgery, and the speakers are:

Dr. William P. Longmire, Jr., University of California Medical Center, Los Angeles.

Dr. Ian G. MacDonald, Los Angeles.

Dr. Rutherford S. Gilfillan, San Francisco.

Dr. Bernard Hanley, Los Angeles.

Dr. Walter C. Graham, Santa Barbara, California.

Members of the Southwestern Surgical Congress and members of the Armed Forces are not required to pay registration fees. Non-members are welcome but will be required to pay registration fee at the time of the meeting. Members of the Arizona Medical Association are invited.

For the meeting a fairly concentrated scientific program including the guest speakers is planned as well as excellent off-time entertainment.

Hawaii Medical Association

The 104th Annual meeting of the Hawaii Medical Association, Honolulu, May 12, 13, 14 and 15, 1960.

Third International Congress Of Physical Medicine

The Third International Congress of Physical Medicine will be held August 21-26, 1960 inclusive at The Mayflower, Washington, D. C.

The preliminary prospectus covering the international conference carries in detail information on registration, application to present a paper, a scientific exhibit, a scientific film, etc. A copy of this preliminary program may be had on request by writing: Dorothea C. Augustin, Executive Secretary, Third International Congress of Physical Medicine, 30 N. Michigan Avenue, Chicago 2, Illinois.

ONE OUT OF 20 MDs IN PRIVATE PRACTICE IS A WOMAN

8,000 Women MDs in Private Pratice in 1958.

What the Women MDs Do:

General Practitioners	57.2%
Pediatricians	15.0%
Psychiatrists and Neurologists	7.9%
Technical Specialists	7.2%
Internists	5.2%
Eye, Ear, Nose & Throat Specialists	4.1%
Obstetricians	3.4%

Proportionately More Women MDs Than Men are Located in the Nation's Small Towns.

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